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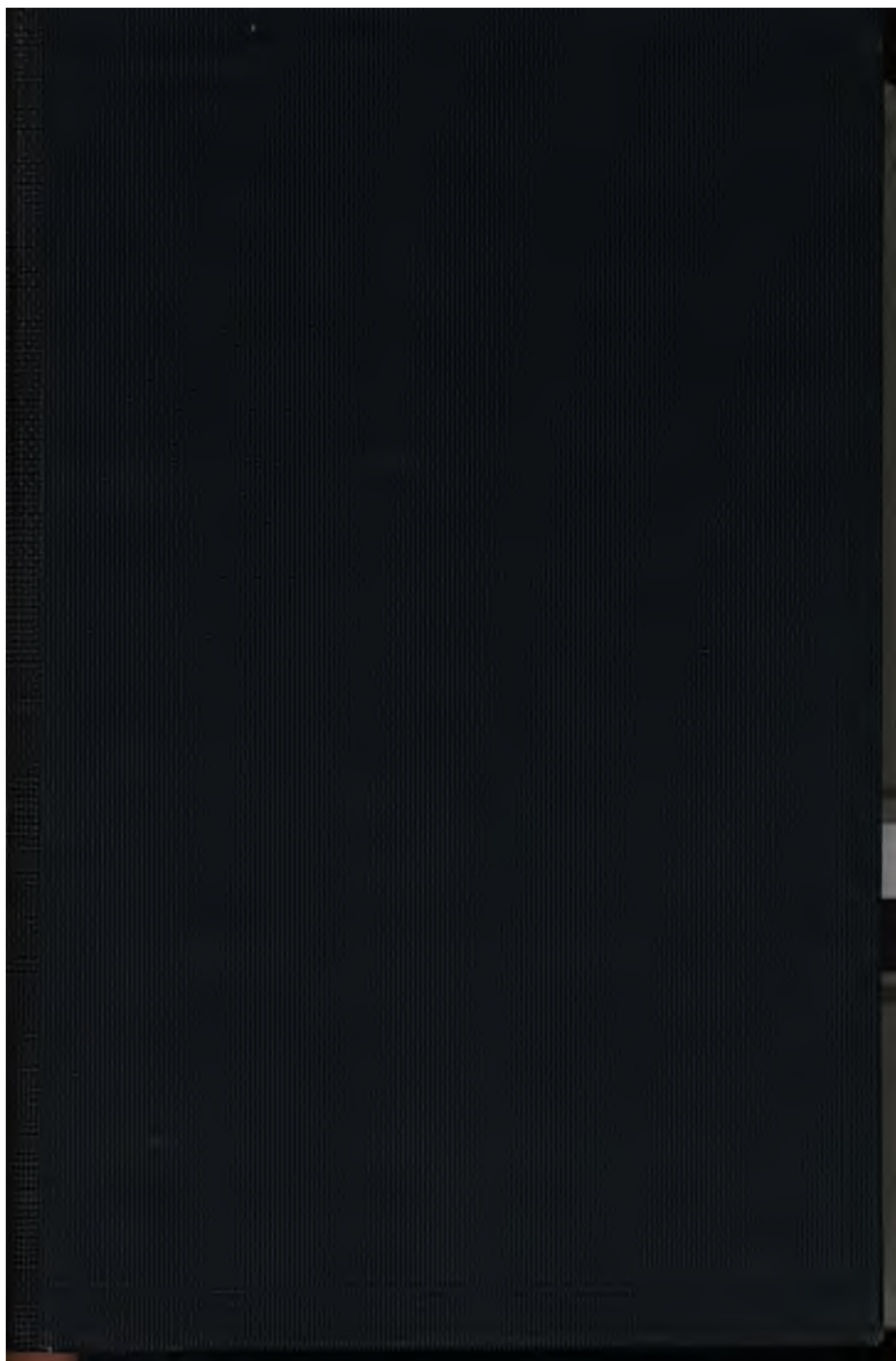
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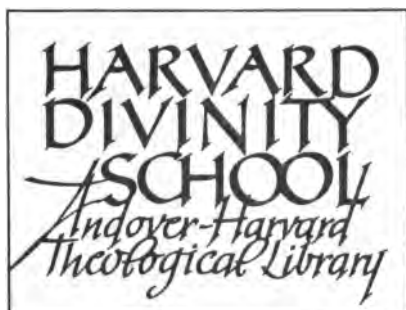
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








# Applied Evolution

BY  
  
MARION D. SHUTTER

AUTHOR OF

"WIT AND HUMOR OF THE BIBLE; A LITERARY STUDY,"  
"JUSTICE AND MERCY" AND "A CHILD OF NATURE"



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TO  
JOHN FISKE.



## PREFACE.

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THE chapters of which this book is composed were originally delivered as a course of Sunday evening lectures in my church at Minneapolis. They were attempts to popularize the teachings of Modern Science, and to show that one might accept the facts, without trimming or evasion, and yet preserve the spirit of reverence and the essence of religion; indeed, find as a result of accepting the facts to the utmost, a profounder reverence and a deeper religious life. The lectures were listened to by large audiences, of from one thousand to twelve hundred people; and their publication in permanent form was widely and earnestly requested. In complying with this demand, I have revised the notes from which the lectures were delivered and the stenographic reports; but have preserved much of the form of direct address. The manuscripts have been submitted to Mr. John Fiske, whose note is appended by permission. I also add a letter from

Dr. James K. Hosmer, widely known for his historical and literary writings, who was one of the auditors when the lectures were originally delivered.

The extract from Mr. Fiske is as follows:—

“I read the lectures which you sent me with very deep interest, and it seems to me that a volume of such lectures would be of inestimable value to the public. They throw a good many side-lights upon the general subject, and in many ways give satisfactory answers to questions that are likely to arise in the reader’s mind. I, for one, shall feel grateful to you for publishing such a book.”

Following is the letter of Dr. Hosmer:—

“Those who cherish Pilgrim traditions hold in special respect the counsel of John Robinson to his people, that as more light was likely to break forth from God it behooved them to keep their souls open to truth, always ready to accept what was properly accredited. In every age since that of the pastor of Leyden, there has been new truth for candid minds to judge, and if found worthy, to accept. In my own time the important new truth is the evolutionary theory, the revised thought of the wisest minds as to God’s method in creation. This great doctrine has made its way not slowly, yet not without stern resistance; and it is a matter to rejoice over when what all thoughtful men feel must be the new faith is announced from a pulpit in a way most uncompromising, and at the same time most reverent. The solemn progress through the vast lapses of time from the monad to that which is fairly animate,—from that which crawls to that which swims; then to that which flies, and at last to that which stands erect with brow expanded to receive a full measure of the light of heaven;—the slow increment of power in the brain as species becomes

merged in higher species, the dawning of intelligence, the extension of infancy with its sweet and momentous sequence of gentleness, humanity, affection, — finally, the development, as the consummation of the long process, of moral and spiritual life, — that this has been the pathway of the divine energy is doctrine, in our time well ascertained and accepted.

This new teaching solves problems that have long vexed thinkers: it brings comfort and good cheer in place of the gloom shed from creeds long outworn, and yet which are so slow to go! It is indeed a thing to cause joy when a preacher standing in his place declares in discourses learned, well-reasoned, eloquent, and yet so simply phrased that the plain people can easily follow, these good tidings of the latter day. Speaking for one hearer, I beg to assure you that I have listened to your exposition with delight, feeling that a great service was rendered by a presentation so able, yet so plain, of what the whole scientific world now receives as well-established. Let me also express my pleasure that your spoken words are to be put into a book, believing as I do that the book must be most useful which shall carry far and wide this noble form of truth."

MARION D. SHUTTER.

MINNEAPOLIS, *February 22, 1900.*





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# I.

INTRODUCTORY: GAIN TO RELIGIOUS  
THOUGHT FROM SCIENTIFIC STUDY.

“ Let knowledge grow from more to more,  
But more of reverence in us dwell ;  
That mind and soul according well,  
May make one music as before,

— But vaster.”

TENNYSON.

## I.

### *INTRODUCTORY: GAIN TO RELIGIOUS THOUGHT FROM SCIENTIFIC STUDY.*

It is related, we know not with how much truth, that a certain Brahmin once shattered a microscope to pieces, because it revealed the fact that every drop of water contained innumerable minute insects; thus showing that the commandments of his religion, which forbade the destruction of living creatures, were broken whenever any one took a draught of water, and must inevitably be broken unless men were to perish of thirst. So long as that microscope remained, the Brahmin argued, his religion was insecure. Whether the story of the Hindoo be correct or not, the illustration will serve. Very similar is the panic of superstition everywhere at the advance of scientific discovery. Many have felt that the Christian religion was not safe in the presence of the astronomer's telescope and the geologist's pick and hammer.

This fear, however, has largely passed, or is passing. We are beginning to see that the

long battle between Science and Religion was, to a certain extent, upon both sides a mistake. Says Savage: "Between a knowledge of the laws of God, which is science, and a reverent and loving obedience to the laws of God, which is religion, it seems simply and only absurd to suppose the possibility of any conflict."

But we can go farther than this: not only is there no real conflict, when we come to understand the subject, but religion, or religious thought, so far from suffering disaster at the hands of science, has been the actual gainer. Religious thought has been helped by its once seeming foe. It has lost nothing but some unscientific notions that were long, but erroneously, supposed to belong to religion. It is better without them. It stands upon solid footing. It can make stronger appeal to the human intellect.

## I.

The first distinct gain that Religious Thought has made from Science is its quickened sense of truth, its awakening to the real nature and value of truth, and the right methods for its discovery. Science has taught theology to look at facts as they are, and not as it wishes or hopes or imagines or guesses them to be.

Theology has learned something of the value of evidence. Religious thought has rested too much upon the authority of Church or Book. The time-honored formula of the theologian has been, "This is God's truth; your controversy is with God and not with me. This you must believe or be damned." Nothing is quite so revolting to the sincere, inquiring mind, as to be met in this fashion — to ask for proofs and be answered with dogmas. Suppose the question concerns the origin of man: it is no longer sufficient to say, "The Bible teaches that he was formed from the dust of the earth, and by creative edict instantly endowed with life." We may still demand how the writer of the account in the Bible obtained his information, and whether his statement is in harmony with facts that have since been ascertained. To say that a scientific or historical statement is in the Bible, settles nothing. Who put it there? Where did he get it? What are his proofs? These questions must still be answered as if the statements were found in any other books. Science has taught us to push our investigations beyond the literature of Genesis. Or, if we are told that this has been the teaching of the Church in all ages, we may justly require the Church to show upon what ground she



bases her claim to speak with authority upon that particular subject. That a certain thing has been taught by the Church in all ages does not guarantee its freedom from error. Repetition, though obstinate and clamorous, cannot turn falsehood into truth; antiquity cannot pass muster as evidence; "gray hairs cannot make folly venerable!"

Science has taught Theology something about right methods of reasoning. "Religion," says Mr. Munger, "will never cease to be a matter of intuition and revelation, but so long as it is only such, it will be overspread by unreason and superstition." Every vagary that dances through the brain will be mistaken for reality substantial as the everlasting hills. The mind is not divided. There are not two distinct methods of reaching objective truth. We cannot receive by direct revelation that which depends upon study and research. We cannot accept by faith that which contradicts our common sense. Historical and scientific assertions made in the name of religion and in relation to religious subjects must be submitted to the same methods of reasoning and the same processes of investigation to which we devote all other statements upon all other subjects. Some one has made the astonishing declaration

that he could, by an act of religious faith, believe in the story of the flood: that the animals came two by two, of all kinds, from all quarters of the earth, — traversing continents and crossing seas, to offer themselves to Noah for his projected voyage in the ark, — but that, as a historical or scientific fact, he could not believe it at all. If a man cannot believe that story as a historical or scientific fact, he has no right to believe it at all. Either such an occurrence took place or it did not. If there is not sufficient evidence to establish it as a historical or scientific fact, no man has a right to incorporate it into his creed or accept it as a matter of religious belief. The story of the flood was no more a revelation from heaven by supernatural agency than the story of the Discovery of America is a revelation from heaven. It is no more a matter of intuition than the story of George Washington's life is a matter of intuition. It is no more a flash of inspired vision than is the story of the Spanish Conquest of Mexico. He who thinks the account of the flood can be established in any other way than any of the facts of history and science are established, is on the way to permanent confusion of thought. He who accepts without evidence or in the teeth of evidence is guilty of intellectual

immorality. He allows the supposed necessities of his creed to destroy his mental integrity. Faith itself must be founded on evidence.

Science is also delivering Theology from the wretched habit of defending doctrines on account of their supposed usefulness. The sole object of Science, as announced by her votaries, is "To discover truth." The scientific spirit has been defined as "the love of truth for truth's own sake." The late Mr. John Tyndall said: "In science the first condition of success is an honest receptivity and a willingness to abandon all preconceived opinions, however cherished, if they be found to contradict the truth." This is the aim and spirit of Science. Not very long ago while a certain unforgotten controversy was raging, a prominent layman of the city of Plainfield, New Jersey, said: "Nobody believes in a certain confession, but it ought not to be revised or disturbed in any way because our Church is founded upon it." A gentleman of national reputation said once: "The common doctrine of hell is all nonsense and educated people do not need it; but it ought to be preached to hold the ignorant in check." A distinguished novelist and lecturer, said after one of his trips through a certain section, "The leading denominations do not seem to ask, 'What is true?'

But 'What can we teach the negro that will make it safe for us?' "

Is it any wonder, with such facts as these staring us in the face, that people so often distrust the sincerity of the Church and the reality of religion itself? The best thing for all classes is truth. The safest thing—the only safe thing—is truth. The best thing in this world for the ignorant is enlightenment. The best thing for the humblest devotee at the altar, as well as for him who ministers thereat, is knowledge. It is as good for the one as for the other. It is as good for the pew as for the pulpit. How can teachers in the church expect to train in the way of duty the consciences of those who look to them for instruction, when they play tricks with their own integrity? How can they preach, "Be true," when they themselves tamper with what, in their inmost hearts, they believe to be falsehood?

May we not hope that the influence already being exerted upon Theology by Science will grow, until religious teachers everywhere will think no longer about what may be useful or safe; will no longer study in new fields simply to confirm old prejudices; will no longer play upon the fears of superstition to perpetuate ecclesiastical power, but will say among themselves, "Let us emulate the men of science; let

us go forth through the realms of nature and life to search for truth; let us abandon old errors when the new light of investigation shall have shown us to be wrong; let us be candid with our fellow-men, no longer proclaiming to them doctrines and creeds we reject in our inmost souls!"

We talk about revivals of religion. We generally mean more prayers and sermons and excitement. But a revival of common honesty in our churches; a revival of the spirit of truth that would consume, in the flames of a higher enthusiasm, the pious frauds and falsehoods we have been proclaiming to the world; that would reduce to ashes the outworn creeds and dogmas that hold their places, solely by virtue of their antiquity, and burden and crush the living thought of to-day; that would purge away the pious phraseology of the past, as well as its ideas,—words and phrases that are dead and empty to-day, as shells on the sea-shore,—and make way for honest modes of expression as well as of thought,—such a revival would give our common Christianity such a power and influence and standing, as never yet have the centuries witnessed!

## II.

Science has not only quickened our sense of truth, caused us to appreciate the value of evidence, and the methods of obtaining it, but Science has greatly enlarged our conceptions of the universe. This fact is intimately related to religious thought and life.

Let us understand distinctly. Science has to do simply with the facts and processes of nature ; it has no word concerning either origin or destiny. These are questions for philosophy.

“My present business,” says Mr. Huxley, in his lectures on Evolution, “is not with the question: ‘Why the objects which constitute nature, came into existence?’ but ‘When they came into existence, and in what order?’ This is as strictly a historical question as when the Angles and Jutes invaded England, and whether they preceded or followed the Romans. But the question about creation is a philosophical problem, and one which cannot be solved or even approached by the historical method.”

But suppose one starts out with the belief in God as the power before all things and back of all things, must he surrender that belief when he stands in the presence of the revelations of modern Science? On the contrary, as one's

conception of the universe enlarges, his ideas of God must become expanded and exalted.

There has been a marvelous extension of the universe in space. It was once thought that this little planet of ours was the center of the universe, that it was the sole theater of the divine activity and interest outside of heaven, that the sun and moon revolved about it, that the stars were bright objects fixed forever upon a crystalline roof. By and by Astronomy came, Copernicus proposed a new system. The telescope of Galileo pointed towards the heavens confirmed Copernicus, and the old theory was destroyed forever. The sun became the center instead of the earth. The level plain of the earth dropped its four corners and rolled itself into a sphere. The crystalline globes of Ptolemy were shattered. The blue roof of the firmament vanished into space. The star candles that the Creator had placed there to light the darkness of man's dwelling place by night, resolved themselves into planets and systems and suns. It would be wearisome to repeat the old story of excommunication, prison, martyrdom, that met the prophets of the new scientific faith. But the truth for which they suffered the loss of all things, — even life itself, — has triumphed over their ashes and flourishes above their graves.

There has also been a marvelous extension of the universe in time. How long was it supposed that the time from Eden onward could be measured by less than six thousand years! By and by Geology came. Digging down beneath the surface of the earth, the geologist struck with his pick tables of stone that were older than those of Sinai. The geologist examined those rocky tablets and found inscribed upon them a revelation that told of an antiquity for the earth which stretched into the twilight of a past eternity. It was the old story over again, and as Dr. Andrew D. White says: "Strange as it may at first seem, the war on Geology was waged more fiercely in Protestant countries than in Catholic; the older Church had learned by her earlier wretched mistakes what dangers to her claim of infallibility lay in meddling with a growing Science. In Italy, then entirely under papal control, little open opposition was made; and of all countries, England furnished the most bitter opponents to Geology at first, and the most active negotiations in patching up a truce on the basis of a sham science afterwards."

While the universe has thus been extended both in time and space, we are no less impressed with its wonderful unity and order. After the discoveries of Astronomy, the next



great discovery of Science was the law of gravitation. Newton taught us that law reigns everywhere; that it controls, not only the falling apple, but the rolling world. All things are held together, and each is held in its own place, by the grasp of a single power. But in that day good people cried out against the discovery as they had before done against Astronomy, as they afterwards did against Geology. They exclaimed, "If God does not directly support the earth, if the moon rides unattended on her way, if the stars sweep onward in answer to a dumb and speechless law, then we have no need of God. The heavens have ceased to declare his glory and speak only of a loveless law."

Still more wonderful, perhaps, has been the last great revelation of Science,—the method and processes by which the universe and man have come to be what we find them at present. Let us speak particularly of man. If the religious world denounced Copernicus and Galileo and Newton and Kepler, still more bitter—if possible—was its denunciation of Mr. Charles Darwin when he published his "Origin of Species" and "Descent of Man." In many a church, even to-day, this illustrious discoverer is accounted as a blasphemer, and his work

identified with atheism and materialism. But his work has triumphed. There is hardly a respectable authority in Science to-day that does not adopt and teach, in some form or other, the doctrine of evolution. Man, instead of being created by a single fiat of omnipotence some thousands of years ago, is seen, in the light of this revelation, to have first risen to his feet, at least one hundred thousand years ago, and then wandered through the forests and caves and jungles of the earth, instead of dwelling in a beautiful garden; that he first made implements of wood and stone, and battled with the beasts, almost as wild and savage as the beasts himself.

But this is not all. We can go farther back. Through years that no arithmetic can compute, he slowly developed from one form of animal life to another. His ancestors swam the primeval seas, crawled upon the bosom of the changing earth through geological aeons, and swung from tree to tree in the primitive forests. And man, even to-day, has written in his frame the story of his derivation and growth. And while his face is turned toward heaven, he is linked to the savage and to the animal which was before the savage.

And we hold that it is better and nobler, —

better to have risen from cave and jungle than to have fallen from Eden; better to have developed from the animal than to have degenerated from the angel; better to have begun at the bottom and toiled to the top, than to have begun at the summit and rolled down to the base; better to have the golden age before us than behind us; better to be on the way to perfection, with hope and courage, than to be trudging discrowned and dishonored, away from perfection.

### III.

Let us now go back for a moment. We said that Science was dumb regarding origin and destiny. It deals simply with methods and processes. Therefore, we have thus far omitted all mention of religion. We have tried to state the scientific facts correctly. Beyond these facts, many will not venture. They go thus far, but no farther. This is as far, indeed, as the scientist, as scientist, can go. But turning now to the theologian or the religious man, we say to him: "Instead of warring against the conception of the universe that science has given us, let us be profoundly grateful in the name of religion itself."

If we looked with awe and reverence upon God, when we believed the universe so small, with how much greater reverence should we regard him, now that the crystalline roof has been lifted, and worlds without number are seen revolving beyond !

If we knelt with adoration before God when we believed his work extended through but six thousand years, how much greater ought our admiration to be, when we behold the time-limits removed, the gates of Eden broken and cast aside, and far beyond, in the dim twilight of the remotest ages, the Omnipotent worker at his tasks !

If we felt that God was being pushed out of his universe when the law of gravitation was discovered, how much more clearly do we now see, that it identifies him all the more closely with his universe : that the law of gravitation is his law as much as are the statutes engraved on the tables of his commandments. The same God who says to man, "Thou shalt commit no injury to thy brother," says to this glittering planet, "This shall be thy place ; here will I fix thee ; thou shalt strike and injure no brother planet on its journey, but thou shalt keep thine appointed pathway." Thanks be to Newton and Kepler, prophets of the heavens, as Isaiah

and Paul were prophets of the heart. Gravitation is simply the golden rule, lifted from among men, and applied to the stars.

If we thought of the wisdom and love of God, when we believed that by one creative act man was formed of the dust of the earth and made a living soul, with how much greater wonder must we admire the patience and purpose and love revealed in the whole process of evolution through countless ages and endless forms of life. How much stronger our assurance, too, that man—the product of such infinite patience and care—is not destined to perish! The greatness of his future, we measure by all that went before. The fate of the temple we forecast from the manner in which its foundations were laid and its walls up-reared. The corner-stone rests amid the shadows of the past; the light of immortality is gilding the spire.

We thank the great prophets of God who have given us these revelations, although what they have shown us of man and the universe does not correspond with the scientific notions that prevailed when our Bible was written. "No one," says James Martineau, "could ever have supposed that religion was hurt by these discoveries, had not Christendom unhappily

bound up its religion with the physics of Moses and of Paul. Setting aside any question of authority, and looking with fresh eyes upon the reality itself, who would not own that we live in a more glorious universe than they? Who would go to a Herschel and say, 'Roof over your stellar infinitudes and give me back the solid firmament, with its waters and its clouds beneath; find me again the third story of the heavens, where the apostle heard the ineffable words.' Who would demand of a Darwin, 'Blot out your geologic time and take me home again to the easy limit of six thousand years.' Who, I say, not in the interests of his science, but in the very hour of his midnight prayer, would wish to look into skies less deep, or to be near a God whose presence was the living chain of fewer ages? It can not be denied that the architects of science have raised over us a nobler temple, and the hierophants of nature introduced us to a diviner worship."

#### IV.

One thing more has Science done. It has not only quickened our sense of truth; it has not only given us a sublimer temple in which to worship; but it has cleared away many of the superstitions of religion.

One form of superstition filled the air with evil spirits, who took possession of the faculties as well as of the bodies of men. Science comes and shows us that disease and deformity and insanity are not the work of devils. It has destroyed that terrible belief in witchcraft, which blotted so many Christian centuries, which caused such cruel suffering and wrong. With its revelations of the origin, and nature, and remedies of disease, it is banishing the belief in a personal devil and personal evil spirits supposed to assail and tempt men. With the departure of the devil from human thought, go many of the horrible fancies that gathered around the tomb and made the future lurid with terror. With the vanishing devil, vanish the flames of a material and local hell. Thus is Science relieving the soul from a host of fears, and scattering the deepest shadows that ever rested upon the human mind. Science is the great exorcist. Science, with the authority of knowledge, is casting the devils out of God's universe, and revealing the unity and order that everywhere prevail.

Another form of superstition saw, in the strange and violent operations of nature, manifestations of an angry God. Its interpretation of natural calamity was human sin. God's

voice of indignation rolled in the thunder, the glance of his vengeance was in the lightning. The auroral displays predicted war and famine. Sudden death was an act of Divine judgment. Science has reversed all this, and invaded with order and reason this tangled field of superstition. It has stripped away the garment of terror in which men had wrapped themselves. "It has," says Mr. Munger, "relieved the world of an incubus of fear and misery that well-nigh outweighed the joy of existence." The world had been conceived of as an immense prison, with God as infinite jailer, — a prison with scourge and rack and every instrument of terror, — till science smote the scales from the eyes of blinded and panic-stricken humanity, and bade them behold in our planet a school for training and discipline.

Another form of superstition saw the avenging hand of God in plague and pestilence. When great multitudes were being swept away by fearful contagion, days of fasting and prayer were ordered that God might stay his hand. But the pestilence swept on till it had consumed and destroyed its thousands. All the days of fasting and prayer that were ever appointed never availed to save a single life from the all-devouring epidemic. Science



comes to our great cities to-day, and says: "Pestilence is the result of uncleanness, of unsanitary conditions. The sin which has brought this vengeance is filth. The gospel which I preach, the message by which you are to be saved, the word of salvation is: 'Be clean, be clean!'"

These are some of the benefits that Science has rendered to Religion and Religious Thought. It has quickened the spiritual as well as the intellectual and practical life. God is greater than we knew. Our feelings of awe and reverence are intensified. We may exclaim, with clearer understanding than did the psalmist: "Great and marvelous are thy works, O Lord God Almighty! In wisdom hast thou made them all."

## V.

There comes to me, at times, a vision that I trust will some day be realized. But it will not be realized by dependence upon any infallible authority that may be claimed for either a Church or a Book. It will not be realized by forcing upon the human intellect a science outgrown and dead for centuries, simply because the record of it has been embalmed in Genesis. It will not come through the perverted ingenu-

ity that attempts a reconciliation between the living and growing thought of to-day, and the crude and childish notions of remote and ignorant yesterdays. But it will be realized through free and untrammelled thought and investigation. It will be realized under the light of a sun whose goings forth cannot be stopped by the frantic appeals of owls and bats still dwelling in the darkness of tradition and prejudice. It will be realized along independent pathways. It will be realized by unhindered study of parchments that are older than Moses. There will some day be a reconciliation, such as has never been dreamed of by those who to-day are still trying to patch together, and work into the same pattern, the facts of science and the texts of Scripture. It will be realized when, at the end of our researches, without priest or intermediary or book, we come face to face with the life that pervades, upholds, and perpetuates the entire order of nature.

I see "the great white throne and Him who sits upon it," beheld by the prophet on Patmos, — symbolizing the wisdom and love and power back of all outward things. Before the throne are gathered those who have ministered at the altar and dealt with the human heart in its aspirations and longings. There also are those

who have searched the heavens, who have dug into the earth, who have traced the processes of life. There is no longer schism or discord. The astronomer turns from contemplating the stars, to think upon the mystery in which their fires were lighted. The geologist turns from the earth to exclaim, "Before the mountains were brought forth — from everlasting to everlasting, thou art God." The evolutionist suspends his researches to pay honor to Him from whom all life has issued, — whose heart-throbs are felt in every pulse-beat of nature. Led by him who ministers at the altar, they exclaim, in words that mean immeasurably more than they did to the seer of Patmos : — "Thou art worthy, O God, to receive honor and power and glory and blessing; for thou hast created all things, and for thy good pleasure, they are and were created!" And all the multitudes upon the earth, and the greater multitudes that fill the skies, reply: "Amen and amen!"

## II.

THE DEFINITION: WHAT EVOLUTION  
IS AND WHAT IT IS NOT.

**“ The eye reads omens where it goes,  
And speaks all languages the rose ;  
And striving to be man, the worm  
Mounts through all the spires of form.”**

**EMERSON.**

## II.

### *THE DEFINITION: WHAT EVOLUTION IS AND WHAT IT IS NOT.*

THERE are two theories of the universe, which may be illustrated as follows: Take an artificial flower.\* The stem was made by itself, the petals were cut out, each one separately. The leaves were fashioned in the same way. None of these parts had any relation to each other. The leaves and flowers did not grow out of the stem. They were made piece by piece and put together afterwards. They were made and put together by some power outside of them. They were not produced by any interior force, by any power acting from within. This illustrates the first theory of the universe, that of special creation.

In other words, the earth and all that it contains were called into being at no very remote period of the past, by the creative word or touch of Jehovah. The entire work was completed in six days,—although modern interpreters stretch

\* Used by Dr. Lyman Abbott.

without warrant the six Scriptural days into long geologic periods, trying to save their Science and their Scripture, and making bad work of both. Each species of animal, creeping, walking, or flying, was made as we find it to-day by some special word or act, and added to all the rest. No two bear any relation to each other. They are separate and independent, as the leaves of the artificial flower, until placed in juxtaposition by some external force. Man's body was made at once out of the dust of the earth, and stands entirely unrelated to any other beings that went before. The spirit was flashed into it in an instant. When the flood came, the family of Noah was preserved in the ark, together with specimens of all the other living things that had been originally created. From those the present races of men and the present species of animals have sprung. Calvin stated the theory very succinctly when he said: "All species of animals were created in six days, each day made up of an evening and a morning, and no new species has ever appeared since." This was the main theory of the universe from the earliest years to more recent times.

Let us now turn from the artificial plant to a real one, which will help us understand the new theory of evolution. This plant was not

made outright. It grew. It grew from a very small germ into its present size, complexity, and beauty. It put out branches from the original stem upon the right hand and upon the left. These, in turn, subdivided, and produced leaves and blossoms. Each part of this plant is vitally related to every other part. The flower at the very top is connected with the roots. In the unfolding of this plant from the seed, there were constant changes; these changes went on without interruption; they were progressive. The unfolding of this plant took place by means of a force that was wrapped up in the plant itself. The growth was from within.

This illustration will pave the way to a better understanding of that classic definition by Le Conte: "Evolution is continuous, progressive change, according to certain laws, and by means of resident forces."

## I.

EVOLUTION IS "CONTINUOUS, PROGRESSIVE CHANGE."

This theory is the result, not of theological dogmas based upon the letter of an infallible book; it is the result of patient study and re-



search on the part of scientific men, — men who take nothing for granted, — and who believe that nature and nature's processes can only be learned by the most thorough study of nature itself.

The conclusions of these students of the universe and the life which it contains and which has recorded itself in the earth, is this: All things that exist, the earth upon which we stand, the plants that grow in its soil, the animals that roam its forests and swim its seas, man himself the crown of the whole, have not been created just as we see them, all at once, or each by some definite act, but have become what they are by a long and gradual succession of changes. Evolution means that the earth, instead of being flung into space a ready-made sphere from the hand of God, took its rise in nebulous mists and clouds, and by a process of whirling and condensing and cooling, through countless ages, became the globe of to-day. Evolution means that, whatever the ultimate origin of life, the plants and flowers and grasses and trees which clothe the earth, were not made at once, as we behold them now, but began in the simplest and fewest germs; and by slow and gradual changes, under varying conditions, attained the variety, luxuriance, and beauty

which wreath the brow of the planet. It means that the members of the animal kingdom, in all its departments, were not — each kind — called into being in a moment, and in fixed and definite and unvarying and unchanging species; but that the whole kingdom began countless ages ago in a shapeless mass of jelly, and has developed from one form to another up to man. There has been no break or crack or flaw in the entire process. Professor Wilson says: "There can be no evolution for one group, and special creation for another. There can be no evolution for the lower races and creation for the higher forms of animal life, or for man himself. Uniformity and sequence exist wholly or not at all." These changes were progressive, from lower forms to higher, from simple to complex. They were continuous. With nature it was no six days' task, with a seventh for rest. With tireless energy has nature wrought, and pursues her work to-day with undiminished vigor after the lapse of unnumbered centuries.

## II.

THESE CHANGES CONSTANTLY GOING ON,  
UPON AN ASCENDING SCALE, HAVE TAKEN  
PLACE ACCORDING TO CERTAIN LAWS.

1. The first is technically called the law of differentiation.

We have all heard more or less of the demand for missing links. People used to say, "If one species has been transmuted into another, Mr. Darwin ought to be able to show us the animal half-way between." Here, we are told, are two distinct animals. Now, if one is a modification of the other, or if one is derived from the other, where is the intermediate form? Where is the particular animal that connects these two? And so, very much was said, and there was no little merry-making even, over the missing links. People said, "Mr. Darwin's chain cannot hang together." They said, "There are a great many streams to cross in this process of evolution, and most of the bridges are gone!" And still there are those who talk about missing links, as innocently as if no discoveries had been made within the last thirty or forty years.

The geologic record is admitted to be imper-

fect. Tribes and species have lived and perished, and the relics of them have vanished in the upheavals of the earth and the perturbations of the sea. This was to be expected. But notwithstanding all, some of the missing links were discovered even in Darwin's time. Many others have since been brought to light. Our museums contain whole series of fossil organisms which completely illustrate, step by step, the slow evolution of large divisions of both animals and plants. Our present mammals have been connected by intermediate forms with their remotest ancestors. The pedigree of the horse, for example, is completely traced in fossils back to the little eohippus no bigger than a fox, that trotted about the forest in eocene times.

But we can do better. We can not only trace the connection along single lines, but we can find the connection between two lines entirely different. Agassiz who, for theological reasons, never fully accepted the doctrine of evolution, did much to help it. One thing that he did was to direct attention to the fact that the earliest representatives of any group — whether class, order, or family — were not what we should now call typical representatives of that group; but, on the contrary, they shared

the peculiarities of two distinct groups. In other words, they formed the connecting links between those groups.

Take, for example, the case of the fishes and the reptiles. The earliest vertebrates were fishes; but not true fishes. There were many points of resemblance between them and the amphibious reptiles. Nature comes to a point where the roads separate. One road goes in the direction of the true fishes, the other in the direction of the true reptiles. Is there any form of life that partakes of both characteristics to be found at the cross-roads? Yes; the Mud-fish of the Amazon and the Jeevine of Australian waters, still in existence, combine the characteristics of both, the peculiarities of fish and reptile, and furnish proof that there was a common ancestor for both fishes and reptiles,—a creature from which each branched in a different direction. Both of these creatures have “gills for taking up the oxygen from the water” and an air-bladder by which they can breathe on land. Both also show “the tendency towards the modification of the paired fins into limbs.”

Take another example of even greater interest. Nature follows up the reptile direction till she comes to another branching. We can easily tell the difference between a reptile and a bird

to-day. But if we had lived ever so many ages and ages and ages ago, we might have been puzzled. There was a time when the birds that soar in the sunlight and the reptiles that crawl in the slime,—even the serpents,—were not so distinct and different as they are to-day. They had at least a common ancestor. They had a connecting link. The bird will always bear traces of its lowly origin; the serpent hissing thro' the grass will never forget that it is related to the songster of the skies. There were animals that had the common features, from which one form of life rose up on wings, the other glided through the dust. One of these is found in fossil at Solenhofen, and is called the *Archeopteryx*. It is declared by naturalists to be “as much a reptile as a bird.”

There is such a difference to-day between the egg-laying animals and the mammals that it does not seem possible that they could have ever been related; and yet, in Australia, the connecting links are to be found. The echidna and the ornithorhynchus are both hairy quadrupeds and they are both egg-layers. In the case of the echidna, the eggs are deposited in a pouch, in that of the ornithorhynchus in a nest, and there hatched. And what is still more marvelous, in both cases, after the young are hatched,

they are suckled. These strange animals, surviving from a remote past, mark the place on the tree of life where two distinct boughs branched off in widely different directions. The missing links are no longer subjects for laughter and bantering question; they are being found all too rapidly for the opponents of the new science.

That somewhere in the great life-unfolding, man himself branched off from the mighty trunk can not be doubted. The proofs of this, as brought forth by evolutionists, will be given elsewhere. But something occurred a few years ago which falls in line with the law of differentiation we are now illustrating. In 1891 and 1892, near Trinil, in Central Java, a remarkable discovery was made, by Dr. Dubois, a surgeon of the Netherlands army in the East. This discovery consisted of part of a skull, a molar tooth, and a femur or thigh-bone, found in the later tertiary strata, and belonging to a large anthropoid or man-like ape, which is supposed to represent a new genus and family intermediate between the highest order of apes and men. The tooth and the skull were found together in September, 1891, on the bank of the river Hengawan; in August, 1892, the left femur was found close by. In this animal "the

brain cavity was absolutely larger and, proportionately to the size of the body, much more capacious than in the highest order of apes, yet less so than in man. The capacity of the skull is about two-thirds the average of that of man." The teeth are of the simian type, but differ decidedly from the teeth of existing anthropoid apes, and the femur or thigh-bone is equal in its dimensions to that of man, and like that of man adapted to walking in an upright position. Prof. O. M. Marsh, the distinguished naturalist of Yale College, says that Dr. Dubois "has proved to Science the existence of a new pre-historic form, not human indeed, but in size, brain-power, and erect posture, much nearer than any animal hitherto discovered, living or extinct." A year ago, the *New York Times* said that when Dr. Dubois' statement was sent to Europe, "that eminent authority, Virchow, was unwilling to give any opinion until all the facts were cleared up; but as the evidences have been further presented, Virchow has changed his mind, inasmuch as he is now inclined to the belief that the fossil remains show that they belonged to some creature who might have been the forerunner of man, — or say, an animal half-way up in the scale of humanity." Dr. Brinton says, "To the true



scientist, this discovery was not necessary to his acceptance of Darwin's theory, but it will silence the objections of those who have hoped that the shadow on the dial might be turned backward." "These remarkable fragments," says Edward Clodd, "indicate the nearest approach between man and ape that has yet been discovered." Such evidence is not needed by the scientist, but the demand of those who insist upon the intermediate form being actually produced, the missing link discovered, seems likely to be met, and the bits of skeleton exhumed by Dr. Dubois in Java bring us at least into the immediate vicinity of the discovery. Haeckel declares these bones to be those of the long-searched for "missing link."

2. The other law of evolution that we shall speak of here, is what Le Conte calls "the law of progress of the whole."

This is extremely important. We shall get no right understanding of our subject without it.

"Many imagine," says our author, "that progress is the one law of evolution; in fact, that evolution and progress are co-extensive and convertible terms. They imagine that, in evolution, the progress must be upward and onward in all parts; that degeneration is the

opposite of evolution. This is far from the truth. There is, doubtless, in evolution progress to higher and higher planes; but not along every line nor in every part, for this would be contrary to the law of differentiation. It is only progress of the whole organic kingdom in its entirety."

Let us turn again to the plant for illustration. Down at the very ground, at the root, there is a point where, in the tree of life, you can not tell the difference between plant and animal. There are, even to-day, organisms which the naturalist can not classify. They seem to partake of the characteristics of both plant and animal. The rhizopod seems to have both sensation and purpose; yet it is non-cellular and inorganic. The polyp has no arterial or circulatory system. It consists of simple layers of cells and is propagated by buds. Here is a being which eats and grows like an animal, and yet is reproduced like a vegetable. The sponge is an egg-layer. Its eggs breed or hatch and grow to adult life. These cases take us back to a point that suggests a common origin for both plant and animal.

At length the tree divides. The distinction between plant and animal becomes clear. Let us follow the animal. As we ascend, we find

the tree branching again, and the division between invertebrate and vertebrate is marked. Follow the vertebrate, and it throws off other branches of different kinds, on the right hand and on the left. The tree of life pushes up until man is produced at the top. This illustration shows the whole process in a picture. Special creation says, "Each branch and leaf of the tree was made separately, and put together as the artificial flower." Evolution says, "Each branch and leaf and blossom grew out of the original roots, and unfolded according to external conditions, by the force that resided within."

This illustration corrects the notion that by evolution we mean nothing but progress. Degeneration plays an important part. Species may perish entirely or may revert to lower conditions. The tree grows on, but certain leaves or branches may perish. The whole kingdom of life goes on; but certain classes of plants or animals may die out entirely. Nature carries the general processes forward until they culminate in the consummate flower or fruitage of the tree of life which we call Man. So, in the human realm, civilization goes on; man in general, the whole race is advancing, though special types of civilization perish, though nations once great and honored pass away.

This illustration also answers another question: "Do you mean to say that the invertebrate may now become a vertebrate? Do you believe that a dog or monkey may become a man?" Certainly not. Evolution does not teach it. Evolution does not teach that such a transformation ever did take place. And when this is once thoroughly understood, much of the ignorant opposition to the doctrine will cease. Evolution simply says this: "The Great Tree of Life, in its upward growth from the roots, puts forth these various branches; but after a branch has become definitely formed, it never is transmuted into another branch. You can not take an ordinary tree and turn the lower branch into a higher. Each one, after it has grown out of the tree, stands for itself. It was once a part of the common trunk, and might have gone in one direction or another, or risen nearer the top, but when circumstances, some of which we know to-day, others of which we shall undoubtedly discover, — some of them external and some internal, — decided that the branch should grow as it did, it holds that place and form. Back of plant and animal was some form of existence or substance from which they both sprang. After the turn of development is taken, plant does not change into animal nor animal

into plant. Back of both vertebrate and invertebrate was a common ancestor. After the branching takes place, and the circumstances which determined it have passed away, there is no change back and forth between these two great divisions. Back of the monkey tribes and the man, there was a being partaking the characteristics of both; yet neither the one nor the other, — as the fragments found by Dr. Dubois would seem to indicate. After the branching took place and the monkey tribes and the human tribes became differentiated, they did not and do not change places or natures. They are different branches of the Tree of Life, and must forever remain so. Says Professor Cope, speaking of the clergy as a class, "These gentlemen would have us think that scientists would have us believe that a modern ape was somehow converted into a man. No scientific man has ever advanced such a theory."

To sum up this part of the subject, there is progress in the whole realm of life; but it is not necessarily in all departments at once, or at a uniform rate. There are arrested growths. There are deterioration and decay. The process is like the current of a mighty river. There are motionless pools along the margin. There are backward whirls and eddies. There

are streams that flow out as well as in. But the whole force of the river is set resistlessly towards the ocean. And the ocean it will reach at last.

### III.

THESE CHANGES THUS GOING PROGRESSIVELY FORWARD, ACCORDING TO CERTAIN LAWS, TAKE PLACE BY MEANS OF RESIDENT FORCES.

In other words, these changes take place by forces operating within the organism, and not by special and supernatural intervention from without. The artificial flower was made by an external agency; the plant grew by an interior force. There was a life within it that shaped its growth and was felt in all its parts.

1. We are asked, "Does not your new theory of evolution rule God out of the universe? What place have you left for him? What have you done with the Creator?"

The theory of Evolution simply stands opposed to the crude supernaturalism of the past, which looked upon all changes as being handled from without by a power constantly breaking in upon the established order and the natural process, instead of working through them.

While the scientific man has simply to do with the methods and facts of nature, the religious man, when these are discovered, need not abandon his belief in a wise and loving power back of all that the eye can see and the hand handle. We can no longer believe in special creations. But the religious man, instead of fearing that God is read out of his universe, ought to feel that God is identified all the more closely with his universe. The scientific man shows us the processes of nature; the religious man may see in them the methods of God. He no longer appears as a carpenter standing outside, building a fabric or constructing a machine; but he is the very life and soul of his universe, animating every part, guiding from within and not without, all things to

“ One far-off, divine event,  
To which the whole creation moves.”

But the religious man may go farther and he may say to the scientist: “ You tell me of resident forces; you tell me of life and power manifested in every atom of this great universe; and I believe it all. But to me that life which is behind the plant in its unfolding, the animal in its development, and man in his growth to perfection, is none other than the Living God

himself, to whom I cry with the Psalmist, 'Before the mountains were brought forth, or ever thou hadst formed the earth and the world, even from everlasting to everlasting thou art God.'" Science compels us to change some of our notions about God; but does not rule out of the universe an infinite power, intelligence and love.

2. Equally groundless are the fears of those who think that evolution completely materializes man. Carlyle, who never tried to understand the question, stigmatized it as a "brutal philosophy."

Every argument for the soul of man that ever had any force in it still remains. Nothing in that department of thought is abated. We may discredit the old story of man's creation from the ground, and yet believe that he has become a living soul. Indeed, the doctrine of evolution but adds to the dignity and worth of man. We measure man to-day by all the processes that have gone to produce him. In the light of an infinite past, we hold him up. The crown of the universe, the consummate flower of the ages, what honor and glory are his! — how vastly superior to the being of a few thousand years, created at the pinnacle, and ignominiously fallen to the base, covered with the



dust of humiliation and disheartened by the original defeat. The new theory shows man with the roots of his life deep struck in the soil of the eternity past, — assurance that the blossom of his life shall go on unfolding in the light and air of an eternity to come !

### **III.**

#### **EVIDENCES OF EVOLUTION: THE HUMAN BODY.**

“ Again, the great Creator, as you know,  
Drew man out of the animal into the human state.  
Thus man passed from one order of nature to another,  
Till he became wise and knowing and strong as he is  
now.”

JALAL AD DIN.

### III.

#### *EVIDENCES OF EVOLUTION: THE HUMAN BODY.*

FROM the definition of Evolution, let us now pass to the proofs. There is still some repugnance to accepting this theory of the origin, even of the human body. There are still those who believe that, even though evolution prevailed everywhere else, in the case of man there must have been an exception. The evidence to be placed before you I trust will go far towards including man, at least so far as his physical frame is concerned, in the one great process through which nature has wrought from the beginning. Whether the soul must also be included, is another question and one to be considered later. To come at once to our subject: What are some of the evidences upon which the theory of animal descent for the human body depends?

## I.

## SIMILARITY OF STRUCTURE.

Man, together with all higher vertebrates, is built upon the same general plan. The same style of anatomical architecture prevails in all cases. Alfred Russell Wallace declares: "To anyone who considers the structure of man's body, even in the most superficial manner, it must be evident that it is the body of an animal, differing greatly, it is true, from the bodies of all other animals, but agreeing with them in all essential features." Why should this be so, if there was in each case an act of special creation? Why, in particular, should this be so in the case of man? Why should his anatomy resemble so closely that of animals, if he is the grand exception to the rule? Would not Nature have signalized the fact and have put it beyond all question by choosing a special design for this isolated structure?

If we go into a museum, such as may be found in the great universities, and compare the skeleton of man with the skeletons of other vertebrates, our pride of immeasurable superiority to the "beasts that perish" will receive a tremendous shock. What outward resemblance is

there between a fish and a bird, between a lizard and a dog, between any of these and a man? And yet, when "this muddy vesture of decay that doth hem us in," is laid aside, how strikingly alike are the disrobed skeletons! Bone for bone corresponds throughout. Fin of fish, paddle of whale, wing of bird, foreleg of quadruped, arm of man, and all the other bones, these hinged upon a vertebral column, surmounted by a skull. The plan is everywhere the same. On the theory of special creation, if man was made at once and without reference to the animals, we should have looked for a distinguishing, individual frame. Nature should have done the work so that there could not possibly have been any after mistake and confusion. Nature should have anticipated the anatomical museum and provided against its disturbing influence. On the theory that man is derived, by successive modifications, from the animal, the resemblances that are so obvious are easily explained, and this is the only theory that rationally accounts for them.

And when nature took this ground-plan and began to build a man upon it, she did not go out after new and different material; she simply transferred the organs of the lower animals and bade them perform the same functions. As

Nature took the skeleton bone for bone, so she transfers muscles, nerves, veins, arteries, internal viscera, lungs, heart, brain, — simply modifying them according to new circumstances, according to the needs of the evolving being. This fact was once taken by certain preachers to show the fallen, instead of the risen, condition of man. They thought that instead of evolving from the animal, he had degenerated into certain resemblances. Good Dr. Guthrie, one of the most genial souls who ever filled a Scotch Presbyterian pulpit, tells with great humor in his "Autobiography," how an uneducated man once undertook to preach in Dr. Blair's pulpit in Edinburgh. He had somehow gotten hold of this fact that man and the beasts had certain organs in common, and must perforce make use of it. So he announced his intention of preaching upon the Fall, and of proving that man was a fallen being. I can not give the broad Scotch dialect in which Dr. Guthrie has related the story, but translated into every-day English it is this: "I am going to prove that man is fallen, first from the science of anatomy. It is well known that even a pig has all the insides of a man except one; and if that does not prove that man has fallen, there's nothing will." But in spite of the good divine's in-

terpretation, the movement of Nature has been in the opposite direction; and man's face was set away from the swine, and like the face of the prodigal in the parable, was set towards the Great Father and the great destiny in the Father's house.

And these organs that nature has modified and carried over for the use of man, are made of the same kind of clay — not a whit finer.

The flesh of animals and the flesh of men are heir to the same physical ills, and thus prove their kinship. Their liability to the same diseases shows "the close similarity of tissues and blood." To take a particular example, Darwin shows that the nerves of taste are the same in monkeys and men. He says: "Many kinds of monkeys have a strong taste for tea, coffee and spirituous liquors," and relates that he has seen them smoke tobacco with pleasure. Boehm, as quoted by Darwin, asserts that the natives of Northeastern Africa used to catch wild baboons by exposing vessels with strong beer, by which they were made drunk. On the following morning, they were very cross and dismal, just like their human brethren; they held their aching heads with both hands, and wore a most pitiful expression — experiencing what Byron called "the hell of drink, that damned



and dread next morning." But, unlike their human relatives and even wiser, when beer or wine was afterwards offered them, they turned away with disgust.

So much for the argument from structure. "It is scarcely possible," says Mr. Darwin, "to exaggerate the close correspondence in general structure, in the minute structure of the tissues, in chemical composition and in constitution, between man and the higher animals." "To the superficial observer," says Le Conte, "the bodies of animals of different classes seem to differ fundamentally in plan, to be entirely different machines, made each for its own purpose at once and out of hand. Extensive comparison, on the contrary, shows them to be the same, although the essential identity is obscured by adaptive modifications. The simplest, in fact, the only scientific explanation of the phenomena of vertebrate structure is the idea of a primeval vertebrate, modified more and more through successive generations, by the necessities of different modes of life."

## II.

## ANIMAL RELICS IN THE HUMAN BODY.

While the correspondences of general structure just mentioned, are found to-day, we may look a little further. If the process of development took place as we believe it did, there would also, in addition to the general results, be some traces of that process left in the body of man. We should not only find the present results, but indications of the ways in which they were reached. Not only would the general structure show the modifications which adapt it to its present uses, but we might expect to find reminiscences of such portions of the structure as man does not need.

When some of us were boys, we used to rummage in old garrets where all sorts of odds and ends were kept, — bits of antiquated furniture, ancient pictures, worn-out tools, — everything that the family had cast aside as useless for many years. The human body is such an old garret, — “a museum of obsolete anatomies, discarded tools, out-grown and aborted organs.” These things are exceedingly significant. They point back to the past. They are land-marks. They show the pathway by which man has come

from ages remote to his present strength and glory. So convincing, as evidence, are these relics that many scientific men are willing to stake the whole question of evolution upon them.

Before proceeding to discuss these rudimentary organs, there is one fact closely related that I wish to mention: There are organs in man's body which have been derived by modification from organs in lower forms of life which there served a different purpose. Let us take a single illustration. Away back, ages and ages and ages ago, that form of life which was to become man, that special fish-form which was to develop along the line that should issue in the human, finally crawled ashore, got out of the sea into the mud and slime near the dry land, and finally upon the dry land itself; but took with it many of the old fish-like characteristics. The ocean life and its necessities had left indelible marks. This fish-like creature in man's ancestral line could not conceal its origin. The chief characteristic of a fish, as is well known, is its apparatus for breathing air dissolved in water. This consists of gills which communicate outwardly through slits in the neck. The water taken in at the mouth passes out through these openings. When the fish came ashore, of course it took Nature a

long time to perfect an air-breathing apparatus adapted to the new conditions. But Nature is very economical — miserly, indeed, is Nature. Nature said: “What am I going to do with that old water-breathing machine? I expended a great deal of time and labor on that. It is altogether too good to throw away.” So Nature concluded to hold on to the gills and gill-slits, and after a long, long while, found an opportunity of using them. So soon as land-life really began, hearing became a necessity. Nature argued that “if water could pass through a hole in the neck, sound could pass likewise, and she set to work upon the highest up of the five gill-slits and slowly elaborated it into a hearing organ.” The ear of man is the gill-slit of the fish worked over and adapted to catching sound. In the human embryo, at a certain stage, all the rest of these openings are found, and in many cases traces of them are discovered in the necks of adults. So much for the transformations.

Let us now come to the direct subject of rudimentary organs. These structures are of two classes: Those which are simply useless, and those which are positively dangerous. In college we used to study Paley’s arguments on design. They were in a book called “Natu-

ral Theology." He insisted that every part of the human frame had been made for some particular and definite use — every organ had its specific object. Benevolent intention, on the part of the Creator, was everywhere manifested. I am not sure but that this opinion of Paley's prevails very widely to-day. However that may be, in more recent years facts have been discovered by closer investigation of the human frame, that set the old form of the argument from design completely aside. It can no longer stand.

There are bits of mechanism in the human body that are entirely useless. Let us mention two or three. There is a bone in the human wrist that is called the pisiform bone. Why is it there? It serves no purpose. It is of no earthly use. It ought to be doing something, or filling some place, on the theory of special creation. On the theory of development, it may be simply a structure left over from some previous form of animal life. And this is precisely what it is. Comparative anatomy shows us that this superfluous wrist-bone is the carpal bone belonging to the sixth finger that vanished somewhere in the "dark backward and abysm of time." And when we set out to discover it, we have to go beyond the mammals

(for they all have this same bone), back to the amphibian reptiles. This useless bone is a relic of this early period, and of these crawling ancestors. In what is called the semilunar fold, man has a remnant of a third eye-lid, which is now possessed entire only by certain beasts and birds. He has remnants of muscles which animals use for twitching the skin, moving the scalp, and erecting the ears. In the small bones called the coccyx, at the extreme end of the vertebral column, is a vestige of the animal tail. Rudimentary muscles for wagging it are also found in the immediate vicinity. An article in the *Popular Science Monthly* some years ago, gave instances in which actual tail-like formations had been discovered in men. These relics of the past show the road over which man has traveled to his present estate. The stages of his journey are recorded in his frame. Reminiscences of the ocean life, the life between land and ocean, the life in the primeval forests, are in the human frame to-day; and while the face of man is turned toward the heavens now, he stands related to all the forms of life that have gone before. Topmost leaf and richest blossom on the tree, he can not deny the roots that are struck in the animal.

There are also rudiments of organs in man

that are not only useless, but a positive menace. Among these are the thyroid gland, seat of the disease known as goitre. Attached to one of the large intestines is a vermiform appendix which, in its original form, in vegetable-eating mammals, is indeed useful in the process of digestion; but in human beings is a constant source of danger and disease. It is a blind tube in which foreign substances lodge, causing inflammation which results in many deaths every year. It is safe to say special creation, minute design, would never have introduced this source of disaster, or the thyroid gland, into the perfect human organism. Evolution shows that it is a relic of the brute, and not a piece of beautiful design on the part of Jehovah.

Perhaps we ought to say another word right here on the general subject of design. The old form of the argument has, indeed, broken down. It has been swept away. No thoughtful mind adopts it to-day. But its destruction does not leave the universe without purpose. There is a larger and grander teleology. There is an aim and plan of wider sweep and more majestic conception. The scientific man simply notes its processes and methods. This is all that, as a scientific man, he may do. Beginning

and end do not come within his province. He watches and studies the marvelous procession. He asks not whence it comes or whither it goes. But the religious man, accepting the facts of science, sees behind all outward manifestations, behind these methods and processes, behind the infinite succession of changes, a life and thought divine. Forms and species, we now see, are not ends in themselves, as the old theory made them; they are all related to a vast scheme which stretches from everlasting to everlasting.

### III.

#### LIFE HISTORY OF THE INDIVIDUAL.

Let us now come back. There is proof more direct and decisive that remains to be given. The human being actually passes before birth through the various phases of animal life that preceded man. This has the force of a demonstration. Each individual member of the race has actually, in the earliest stages of his existence, passed through different animal forms. Each one has been in effect, the fish or the reptile or the quadruped.

We have spoken of Agassiz and his relation to the subject of evolution. Although he never



accepted the theory in its length and breadth, he was a true naturalist and never distorted his facts. By strictly adhering to his facts, he greatly helped the doctrine from which he shrank. He was, in his department, one of the greatest men this country ever saw ; but he was sprung from a race of theologians, and admitted the theology in his blood. What was his special contribution? Le Conte tells us that to him, more than any other man, is due the credit of "having established the laws of succession of living forms in the geological history of the earth, laws upon which must rest any true theory of evolution ;" also that "to him more than to any other man is due the credit of having perfected the method (method of comparison), by the use of which alone, biological science has advanced so rapidly in modern times." This is the most important work of Agassiz.

What are those laws of succession discovered by Agassiz ? We need mention but one. The succession of forms and structures in geological times in any group is similar to the succession of forms and structures in the development of the individual in the same group ; and thus that embryology furnishes the key to geological succession. Let us put that general principle

into a concrete example: The succession of forms and structures in geological times is repeated in the human embryo. What is the geological succession? There was a time, during the Paleozoic period, when there were no vertebrates. The back-bone had not yet been developed. Mollusks of great size and variety and number ruled the sea; clam and oyster held high carnival. No shadow was thrown across their ocean existence. The mollusks had things their own way. They monopolized the waves. But a new power was rising. The fishes were coming on. These Goths and Vandals of the sea were destined to destroy the old régime. They increased and multiplied. They grew large and strong. The struggle for existence took place. The mollusks were reduced. They became a subordinate race, a conquered province. The fish in one form or another was lord and master. Then came the reign of the great reptiles, and the fishes bowed to the new authority. Then the mammals arose, and the reptiles were conquered. Finally came man; and his foot is upon the neck of all the orders that have preceded him! "Thou hast put all things under his feet; all sheep and oxen; yea, and the beasts of the field." This is the succession.

What is the application? It is this: the characteristic form of life in each geologic period is reproduced in the embryo of man. The *fish-like character* is reproduced in the gill-slits which the human embryo possesses almost at the outset. Each individual of to-day was, in the earliest stages of his pre-natal existence, a gill-breather like the fish. Soon these gill-slits, save the upper one which is reserved for the ear, give place to a membrane like that which supersedes the gills in the development of birds and reptiles; and the heart is at first a "simple pulsating chamber like that in worms." Each one of us has thus passed through the *reptilian stage*. Then comes, in the development of the human embryo, the *mammal period*, and that particular form of mammal to which we are most nearly allied. The back-bone prolongs itself into a movable tail. The great toe is extended like the toe of an ape. Three months before birth the body is covered with hair, except on the palms of the hands and the soles of the feet. This is the actual pre-natal history of each of us. The succession of life in the geologic ages is repeated in the embryonic development of every human being. Into a few weeks are compressed the records and results of millions of years.

It is also to be presumed that the "infant new to earth and sky," would exhibit some of the characteristics of that form of animal life through which it last passed. Thus the evidence would be confirmed and completed. Romanes has observed that "in the infant, the feet have a strong deflection inwards, so that the soles almost face one another. This peculiarity which is even more marked in the embryo than in the infant, and which becomes gradually less and less conspicuous, even before the child begins to walk," is highly suggestive. "For it plainly refers to the condition of things in the *Quadrumana*, seeing that in all these animals the feet are similarly curved inwards to facilitate the grasping of branches. And even when walking on the ground apes and monkeys employ to a great extent the outside edges of their feet, as does a child when learning to walk." Or to take the other extreme, the hands. Dr. Louis Robinson has recently observed that "the grasping power of the human hand is so surprisingly great at birth, and during the first few weeks of infancy, as to be far in excess of present requirements on the part of a young child. Hence, he concludes that it refers to our *Quadrumanous* ancestry, the young of anthropoid apes being endowed

with similar powers of grasping in order to hold on to the hair of the mother while she is using her arms for the purpose of locomotion." No other explanation can be given of "the comparatively inordinate force of an infant's grip;" for experiments made by Dr. Robinson showed that "very young babies are able to support their own weight, by holding on to a horizontal bar, for a period varying from one-half to more than two minutes."

Does it seem a degradation to have ascended from the animal? It enhances the dignity and grandeur of man, to think of the ages that went to produce him, of the marvelous processes of which he is the crowned and glorious outcome. We may exclaim with more wonder and greater knowledge than did Hamlet: "What a piece of work is a man!" "Those who know the Cathedral of St. Marks," says Professor Henry Drummond, "will remember how this noblest of the stones of Venice owes its greatness to the patient hands of centuries and centuries of workers, how every quarter of the globe has been spoiled of its treasures to dignify this single shrine. But he who ponders over the more ancient temple of the Human Body, will find imagination fail him as he tries to think from what remote and mingled sources,

from what lands, seas, climates, atmospheres, its varying parts have been brought together, and by what innumerable contributory creatures, swimming, creeping, flying, climbing, each of its several members was wrought and perfected. What ancient chisel first sculptured the rounded columns of the limbs? What dead hands built the cupola of the brain, and from what older ruins were the scattered pieces of its mosaic work wrought? Who fixed the windows in its upper walls? What winds and weathers wrought strength into its buttresses? What ocean beds and forest glades worked up its colorings? What love and terror and night called forth the music? And what life and death and pain and struggle put all together in the noiseless workshops of the past, and removed each worker silently when its task was done? How these things came to be, biology is one long record. The architects and builders of this mighty temple are not anonymous. Their names and the work they did are graven forever on the walls and arches of the human embryo. For this is the volume of that Book in which man's members were written, which in continuance were fashioned when as yet there was none of them."



## IV.

### EVIDENCES OF EVOLUTION: THE HUMAN MIND.



“ A sacred kinship I would not forego  
Binds me to all that breathes ;  
I am the child of earth and air and sea,  
My lullaby by hoarse Silurian storms  
Was chanted. ‘Thro’ endless changing forms  
Of plant and bird and beast, unceasingly  
The toiling ages wrought to fashion me.  
So, these large ancestors have left a trace  
Of their strong souls in mine ;  
I grow and blossom as the tree  
And ever feel deep delving roots  
Binding me closer to the common clay.  
Yet with its airy impulse upward shoots  
My soul into the realms of light and day.”

BOYESEN.

## IV.

### *EVIDENCES OF EVOLUTION: THE HUMAN MIND.*

THERE is a picture entitled "Evolution of the Soul." It is quite in harmony with modern science. The globe is encircled by a long black sweep of clouds representing the elemental forces of nature. From this midnight wreath, the human form seems slowly to emerge, as you gaze. It is long before one discovers this form; for at one point the cloud is so artfully arranged that it seems like the head of a great animal. One takes many looks at this vast head before he sees the human figure. Then man sits supreme upon the circle of the earth; while dim and shadowy in the background, an angel form is seen. Thus does the artist, by a few skillful strokes, represent the process of development from the primal elements up to spirit!

There are those who will agree that the body of man has been produced by gradual changes from the animal; but who will shrink

from the inevitable conclusion of the premises already laid down. They will say: "Surely the soul at least is the direct and instant creation of God. Let the doctrine of evolution be applied everywhere else. Let every other department of the universe be under its sway; but the soul of man is sacred ground which this all-conquering Lord of science must not invade; it is a temple of Deity that must be exempt from this last profanation."

Our faith in evolution, however, goes the whole long distance to the dreaded end. It takes the entire journey from the original fire-mist to the heart of Jesus and the brain of Shakespeare, and finds no break or chasm, no inaccessible hill or bridgeless river, in the entire path. As we believe the body of man to have developed from animal forms that were before it, so we believe that in connection with that process, the soul of man, with its marvelous capacities and faculties, its reason that forges chains of logic to bind the scattered facts of creation into systems, its foresight that plans for the future, its love that folds the sad world in its pitying arms, its imagination that soars to the remotest star, its awe and aspiration that rise to the throne of the Infinite and Eternal, and stand speechless before it, — this soul also

is derived from preceding forms of animal intelligence that date back to the changes in the shapeless amoeba !

Is this startling ? Does this statement seem to rend the foundations ? “ Do you, then, rule God out ? ” By no means. We do not of course intend to involve the scientists in any theological statements. They simply give us facts and methods. For these alone we hold them responsible. The question of origin and the question of outcome, they do not discuss. We may take their ascertained results and interpret them on principles that seem to us the most adequate and reasonable. And so, when the old Vedic poet, encompassed by the mysteries of the universe, utters his pathetic and puzzled cry, “ Who, indeed, knows, who can declare whence it sprang, whence this evolution ? ” we may reply, in the words of the Hebrew poet, “ In the beginning, God.” “ Are there no differences between the minds of brutes and the minds of men ? ” Very important ones. There is a difference between the intellect of a dog and that of a fish ; between the intelligence of a baboon and that of an oyster ; but great as these differences are, none will hesitate to say that they are of degree and not of kind. The lower apes vary more in brain

from the higher apes, than the higher apes vary from man. In other words, there is a greater distance between the brain of the lower and higher ape, than between the brain of the higher ape and the human being. Is the difference in this case one of kind or one of degree? "Do you believe in immortality?" Once for all, yes. "But, after all, is not such a theory a degrading one?" No; it is really a great advance upon the old theory that began with us upon the heights and left us in the mire. It is better to begin in the mud and end upon the mountain.

Let me say right here, however, that we have really no right to ask any of these questions at this point. This is not their proper place. The first thing to consider always is evidence, not consequences. What are the facts? After the evidence is all in, come the readjustments. Let us not raise a crowd of specters and allow them to frighten us from the pursuit of truth. When we have once reached the solid rock and stand upon it, the ghostly fancies of evil that have flitted through our troubled brains will vanish.

### I.

To begin with the simplest consideration of all. If the human mind be an exception to

the general law of evolution, it is the only exception.

This is admitted on all hands. Every other region has been traversed, every other department investigated, and it is agreed that one order rules, one principle obtains. Present results everywhere have been reached by gradual processes; "the process of organic and of mental evolution has been continuous throughout the whole region of life and mind." If the human intellect furnishes an exception, it must be by reason of indubitable facts. If such facts are not forthcoming, we shall be justified in throwing around it the same boundary line which includes every other province.

## II.

When we leave the presumption thus established, and take another step, we find that, in the case of each individual mind, there is a process of gradual development or evolution, extending from infancy to manhood.

The mind at birth is very different from what it is at maturity. It begins at the zero point. If the soul is formed at once by special creative act of God, where are the mental powers during infancy? What is a human babe at

first but a bundle of instincts and sensations? The possibilities are all there; but by what token shall you know a Newton or Lincoln in the cradle? It is no more astonishing that we all began in the animal than that the mind of Washington, the mind which planned and executed the War of Independence, the mind which comprehended the necessity of a constitution, the mind which guided the new nation through the period of experiment, should have begun in the simple instinct which, in the unconscious babe, guides the lips of hunger to the bosom of love.

### III.

Not only is there this process of unfolding in the individual, but it takes place in the same order that marks the ascending grades of intelligence in the animal kingdom.

We have already found the pre-natal development of the human body exhibiting all the stages of animal life in the geological periods, repeating the characteristics of fish and reptile and mammal. The human mind, after birth, passes through the various stages that mark the mental development of the animal kingdom. Beginning with sensation and reflex action,

such as we find in the amoeba, we pass to instinct, perception, and consciousness; then on to intelligence and reason; and finally to self-consciousness in man. So that man not only passes through the characteristic forms of animal life that have appeared upon this planet, but his mental development repeats the intellectual history of the geological ages. The mind of the infant begins in the simplest nerve actions of the lowest animals, actions that are also found in some plants, and blossoms into the wisdom of Solomon and the raptures of Isaiah.

#### IV.

When we advance to an actual comparison of the powers of mind as we find them in men and in animals, we shall discern emotion for emotion, instinct for instinct, faculty for faculty, corresponding. There are differences, indeed; but they are manifestly differences of degree and direction, not of kind.

Fear, hate, love, pride, curiosity, benevolence, revenge, grief, sympathy, awe, wonder, sense of the ludicrous, shame, remorse, these things are illustrated in animals, as well as among men. The list might be greatly extended. Whatever the mind or soul is, in its substance or essence,



if we may use that term, "if shape that might be called which shape had none," must be identical in sponge and genius. I am aware that these comparisons are made under great difficulties, and that we may, after all, understand as little about the mental part of animals as they may be supposed to understand of us. There is a pleasant passage in Heine, in which he relates a conversation with an old lizard of Lucca. The poet dropped the words "I think." "Think!" cried the lizard, with a sharp, aristocratic tone of profound contempt, "think? which of you thinks? For three thousand years, wise sir, I have investigated the spiritual functions of animals, and have made men and apes the special objects of my study . . . and as the result of my researches, I can assure you that no man thinks. Now and then something occurs to him; and these accidentally occurring somethings he calls thoughts; and stringing them together he calls them thinking. But you can take my word for it, no man thinks; no philosopher thinks; neither Schelling nor Hegel ever thought; and so far as their philosophy is concerned, it is mere air and water, like vapors in the sky. I have already seen countless processions of these clouds floating proudly and securely above my head, and the

next morning's sun dissolved them into their original nothingness. There is in reality but one true philosophy; and that is engraved in eternal hieroglyphics on my own tail." I have no doubt that, if the animals knew what we were thinking and saying about them, there would be many an old lizard who could not only correct us, but could also pour contempt upon our high pretensions.

## V.

Without pausing to further make good the comparison I have suggested, — the comparison between the emotions, instincts, and intelligence of animals and men, — I pass to the difficulties in the way of the derivative origin of the human mind.

1. We are told that "the gap between man and the most intelligent animals below him is too great ever to have been bridged over by natural causes."

But no one disputes that mind, in its essence, is the same in all parts of what we term the animal kingdom, and yet there are gaps between different members of that kingdom, as wide as those which exist between man and any of the orders below him. If the gaps can be bridged

in the one case, is it too much to say that they cannot be bridged in the other? We have every reason to believe that they can be bridged, better still that they can be filled up.

Take a single illustration: "Can any gap between man and animal be wider than that between the scale insect and the ant? The full-grown scale insect is described as consisting "simply of a woodish scale hollowed out somewhat on the under side, destitute of feet, and clinging motionless to the leaf, bark or fruit of the plant on which it feeds." There it sticks, doing nothing for itself, but feeding, feeding, feeding; doing nothing more in the animal kingdom than many human beings do for society, — taking all it can get, giving nothing in return. The loafer among men, whether rich or poor, is not divided from the scale insect by any such gulf as that which, in the Scripture fable, rolled between Dives and Lazarus.

But, "go to the ant, thou sluggard, consider her ways and be wise." The researches of naturalists have brought out many things of interest concerning these little creatures. They are able to converse with each other by means of their antennae or feelers in such a way as to give and receive intelligence very accurately and quickly. The ants of the same community

recognize one another as friends, while an ant introduced from another nest, though it be of the same species, is at once recognized as a stranger, and is usually maltreated and often put to death. Superior as our intelligence may be, it must be humiliating to find that the ants know how to manage heretics and Chinamen and Indians and Negroes quite as well as we do, and have nothing to learn from our nineteenth century progress! Ants make war, slaughter each other, take captives and make slaves of them, thus showing a high order of Christian civilization! Ants keep aphides, as human beings keep cows. These insects secrete a sweet honey-like fluid. Ants build houses, roads, and tunnels. They make gardens. There is no insect more interesting. Professor McAllister says: "In intelligence and interest they may be looked on as bearing to the other invertebrates the same relation which man has to his neighboring vertebrates."

Is there not as wide a gap between the scale insect of which I spoke a moment ago, and the ant which carries on so many intelligent activities, as between man and any member of the animal kingdom beneath his feet? Is it not just as difficult to bridge the chasm between the stupid insect that knows nothing but to feed

and the keen wide-awake insect that builds houses, wages war, and makes other insects do its work?

2. We are also told that animals are what they have always been, except where certain breeds have been improved by the application of human intelligence; but that man is constantly advancing. Animals make no progress.

But if we take, for illustration, the simple matter of nest-building among birds, we find that there has been progress within the memory of man. There has been improvement in bird's nest architecture, as well as in the architecture of man's homes and public edifices. "This progress," says Professor Evans, "has been observed especially in California since the settlement of that country, and in all cases they profit from the knowledge acquired by their parents, and the improvement becomes a permanent possession of the race. In places where they are peculiarly exposed to the attacks of pugnacious sparrows, swallows have been known to close the opening in front of their nests and to make the entrance on the back near the wall. In some instances, this purely precautionary and defensive change of structure, after its efficiency has been tested in a single nest, has been adopted by the swallows of an entire district."

Orioles, according to the observations of Dr. Abbott, "finding that the bough from which they have suspended their nest, is too slight to sustain the weight of the full brood, attach it by a long string to the branch above, fastening it securely by a number of turns and a knot. The bird learns by necessity how to strengthen the supports of its house." Of the Baltimore oriole, it is said, "it adapts the texture and structure of its nest to the exigencies of climate. In the Southern states it selects a site on the north side of a tree and builds of Spanish moss loosely put together and without lining, so as to secure a free circulation of air. Farther north it seeks a sunny exposure, builds more compactly, and uses some soft material for lining." The oriole does not stick to one kind of building for all climates. It learns, just as a man does, to adapt its structures to changed circumstances.

Birds also change the materials of which their nests are constructed. The oriole, of which we have just been speaking, once used vegetable fiber for its nest; now it uses yarn and worsted. The tailor bird of East India "used to stitch the leaves of its nest together with fine grass, horse-hair, and threads which it twisted out of wool; since the introduction

of British manufactures it uses sewing-thread and the filaments of textile fabrics, except in remote regions where the ingenious bird still works in the primitive way. So, too, in America, birds in constructing their nests, everywhere turn to their account the products of human industry, and keep abreast the progress of the age. The materials employed correspond to the contemporary state of civilization, and mark the periods of industrial development through which the human race has passed. The wagtails, in a watch-making district of Switzerland, have learned to build their nests of fine steel shavings. A nest of this kind, if preserved, would indicate to the inhabitants of that country a thousand years hence the kind of industry that was carried on by their ancestors." Thus the argument that the mind of animals is always the same, incapable of departing from the methods of their progenitors, while the mind of man is progressive, does not hold.

3. Again, it is objected that animals do not use tools or implements of any kind, while man has added to his efficiency by the whole world of invention. This, to a large extent, is true; but not in such measure as the argument would require.

This is no attempt to prove animals the intellectual equals of men. We are trying to find the germs of those faculties or characteristics which are supposed to distinguish man, to belong to him alone, — in the animal kingdom. If we can find even the suggestion, it establishes the probability that the mind of man, in connection with his body, is derived from lower forms of life. Certainly it removes the objections to the theory.

In regard to the statement that animals never use tools or implements of any kind, what do we understand by "tools"? Anything that supplements the effort of the body, that extends or multiplies its power, that enables one to accomplish what would be impossible without it.

Mr. Peal observed a young elephant select a bamboo stake, and utilize it for detaching a huge elephant-leech which had fixed itself beneath the animal's fore-leg near the body. "Leech-scrapers are," he says, "used by elephants daily." He also saw an elephant select and trim a shoot from the jungle, and use it as a switch for flapping off flies. It has been discovered that "the chimpanzee, in a state of nature, cracks a native fruit, somewhat like a walnut, with a stone." What implements did



primitive man have in the original forests, but sticks and stones? With these he slew game and fought his neighbor, — and these were his principal employments. Rengger easily taught an American monkey to break open hard palm-nuts, and afterwards, of its own accord, it used stones to break open other kinds of nuts, and extended its knowledge to opening boxes as well. "Another monkey," says Mr. Darwin, was "taught to open the lid of a large box with a stick; afterwards it used the stick as a lever to move heavy bodies, and I have myself seen a young orang," Mr. Darwin adds, "put a stick into cornice, slip his hand to the other end, and use it in the proper manner as a lever." Stones and sticks are also used by baboons in their fights with other species of baboons, and to prevent being captured by men. Boehm relates that the attendants of the Duke of Coburg-Gotha, traveling in Abyssinia, attacked with fire-arms a troop of baboons in the pass at Meusa. The baboons, in return, rolled so many stones (some of them as large as a man's head) down the mountain, that the attacking party had to beat a hasty retreat, and the pass was actually, for a time, closed against the caravan. There was inventive genius, as well as bravery, among the denizens of that

Abyssinian forest, who turned the pass of Meusa into a monkey Thermopylae. In the rude use of sticks and stones that we find among these and other creatures, lie our ages of invention, our arts of war.

4. Again, it is said, that animals have only instinct as distinguished from reason; man has reason and uses it.

Let us try to get a simple and yet sufficiently exact definition of reason, and then see whether the assertion holds good. Mr. Romanes, in his *Animal Intelligence*, uses the word in this sense: "The faculty of balancing relations, drawing inferences, and forecasting probabilities." Is it true that animals can not balance the relations existing between things, that they can not draw inferences, and so forecast probabilities,—tell what is likely to happen in certain circumstances? Mr. Darwin says, "It is a significant fact that the more the habits of any particular animal are studied by a naturalist, the more he attributes to reason, the less to unlearned instincts." Rengger relates concerning some American monkeys,—and these stand lowest in intelligence in their class,—that when he first gave them eggs, they smashed them and lost most of their contents. Afterwards, without any instruction, they gently hit one end

against some hard body, and picked off the shell with their fingers. According to the old adage which says, "a burnt child dreads the fire," Rengger's monkeys, when they happened to cut themselves but once with a sharp instrument, never touched it again, or handled it only with the greatest care. Lumps of sugar were often wrapped up in a paper and given them. Once Rengger put a live wasp in the paper, and when the monkey which had received it, opened it hastily, he was stung. After that had once happened, they always afterwards put the paper to their ears to find out whether there was any buzzing or any other movement within. Did not these monkeys draw inferences and forecast probabilities? The process of reasoning in such a case must have been something like this, in effect: This man put a wasp in one piece of paper; if he was mean enough to do it once, he is mean enough to do it again; therefore, I must not be too confiding. In these bits of reasoning among the lower animals, we have the germs of that power of inference which reasoned from the falling apple to the swinging planet, from the perturbations of Uranus to the undiscovered Neptune.

5. A still stronger objection is that of language. Man, it is said, is the only creature

possessed of the power of speech. In speech, Mr. Mivart, who urges this argument, includes signs, gestures, and all sounds that convey information.

Surely, with this large definition, it seems hazardous to deny speech to animals; especially when we remember that a large part of the language of the lowest savages consists in signs and gestures, and in sounds that are only intelligible to themselves. Of the Veddahs of Ceylon, Mr. G. R. Mercer, after a long residence in their country, says, "Even their communications with one another are made by signs, grimaces, and guttural sounds, which bear little or no resemblance to distinct words or systematized language." "When we remember," says Professor Sayce, "the inarticulate clicks, which still form part of the Bushman's language, it would seem as if no line of division could be drawn between man and beast, even when language is made the test." "Apes make use of similar clicks for like purpose, and these sounds are doubtless survivals of speech before it became distinctively articulate." Darwin asserts that "the dog, since being domesticated, has learned to bark in at least five or six distinct tones, namely: the bark of eagerness, as in the chase; that of anger, as well as growl-

ing; the yelp or howl of despair when shut up; the baying at night; the bark of joy when starting on a walk with his master; and the very distinct one of demand or supplication, as when wishing for a door or window to be opened." It must be remembered also that "this variety of tones, expressing different desires and emotions," has been developed in an animal that in its wild state can not bark at all. And Professor Evans adds that "the dog expresses thought and emotions by wagging his tail to quite as good purpose as many persons do by wagging their tongues." Dr. Burton says that "the cat has a more voluminous and expressive vocabulary than any other brute." Not long ago Mr. Richard L. Garner set himself to investigate. He took the monkey tribes. He went to Africa and studied them in their wild state. He studied them tamed in Zoölogical gardens. He claims that he has discovered an actual language; limited, indeed, in its range, but nevertheless an articulate speech. These considerations show us that the speech and literatures of civilization strike their roots deep in the primeval forests. Language, in its rudiments, antedates even the earliest savage.

6. The strongest of all arguments against the evolution of the soul in connection with

the body, is found when we come to the sphere of morals and religion. Have animals a moral sense? Are they in possession of a conscience? Do they worship? Is there not a line of distinction here that can not be erased?

It is not affirmed that animals have a fully developed moral and religious nature; it will be quite sufficient for my purpose if we find even the germs of such nature, — the tiniest spark of conscience, the feeblest flame of awe or reverence.

(1.) Among animals in which the social instinct is strong, there would almost of necessity at last be developed some sense of right and wrong, and some sense of justice. Let us take an illustration or two. The workings of at least a partially developed conscience may often be seen among dogs, when detected in pilfering or other wrong-doing. The sneaking gait, depressed head and tail, generally mortified and chagrined appearance, — all tell as plainly as anything can, that the wretched animal knows he has been doing wrong. But you say, "He would not feel this way if he had not been detected." But many a man that we know would have no trouble with his conscience if he had not been detected in his wrong-doing. Fear of exposure is about all the

conscience that multitudes of human beings up to this date, know. But you say, "The dog is afraid of punishment." That is just exactly what the man is afraid of when he is found out, — punishment in the shape of disgrace, adverse public opinion, the penitentiary, or hell! What matters it, so long as it is punishment he fears? There is also a strong sense of justice to be found in some quarters of the animal world. In the *Popular Science Monthly*, some years ago, appeared an interesting article descriptive of Bird Courts of Justice, showing that among crows, rooks, and storks, there are such things as regular trials of culprits. The delinquent is placed in an open space before the assembly, and allowed to make his own defense; if not satisfactory, an angry clamor arises from the multitude, and finally the culprit is picked with the beaks and pounded with the wings of his peers, till dead. There is no long delay with birds between sentence and execution of sentence. They evidently do not intend that the criminal shall get into the newspapers. The law's delays among men might very well be accelerated by such examples.

(2.) But what of the belief in God, the feeling of awe and reverence, the impulse to worship? We argue that this is put into us

directly, that the belief in God is innate and universal; that it was never developed.

This entire subject will be treated separately when we come to the development of Morality and Religion. In the meantime a few remarks must suffice. When we deny the religious sentiments to animals, it is because we have not carefully analyzed the sentiments that pass, at least, for religious among men. The dominant force in the religion of savages is fear, — fear of invisible agencies. Do we need anything more than a most superficial reading of Christian history to convince us that fear has played the most important part even among those who have been called Christians? — fear of the endless flames of the future? — fear of the wrath of God? — fear of the machinations of devils? How far has the average Christian surpassed the average savage? How far has the average savage surpassed the brute that cringes and crouches at his master's feet for fear of the lash? What the flaming Jehovah and the plotting demons have been to the Christian, what the unseen foes of the air have been to the savage, that has some superior wild beast or man himself been to the terrified and shrinking brute. Or if we rise higher and take the sentiment of love, we find it in the affection of the lower



animals for a master, as we find it in the most civilized and most truly Christianized master, for the God whose name is Love ! The master is providence to the animal as the Great All-Father is Providence to the master !

## VI.

It enhances the greatness of man to think of the way by which he has come to his present estate.

We find that the beginnings of what comes to such glorious fruition in man were in the forms of life he has left behind in his marvelous struggle for supremacy ; that mental parts as well as bodily organs were developed ; that human soul and physical frame came up together from the remote generations of the past. It is greatly to his credit that the instinct of progress which was in beast and bird, has gone immeasurably farther in man and produced the civilizations of the globe ; that the feebly developed impulse to use tools and weapons has at last produced an Edison and a Krupp ; that the elementary form of reason in bird or ape, in man can forge the logic of an Aristotle and shape the methods of a Bacon ; that the rudimentary conscience of the brute can give birth

at last in man to the moral systems of the greatest and wisest of earth; that fear and love of a master, in the lower animals, can rise to reverence and worship in the souls of Isaiah and Paul! "As in a building, stone rests on stone, and wanting the foundation all would be wanting; so in human life, each action rests on the foregone event that made it possible, but is forgotten and buried in the earth."

If we have reached these heights along the track of the slow ages, what grander things may the future hold? In man we reach the point where his intelligence becomes a factor in the process of evolution and the forces that wrought hitherto have largely done their work. Now we may help. And as in the long centuries that have gone, those forces wrought more to perfect the physical than the mental, henceforth the soul will be the central point. To its development we must make everything contribute. We are standing upon the very edge of a new epoch in the history of man,—the age of the spirit. Capacities and powers which we cannot now even conjecture lie wrapped up in the human mind. Psychical investigations of different kinds will not be without result. Some of these are yet crude and unsatisfactory; but they hold the promise of something better. Topmost blossom on the

Tree of Life, O Man, thou art connected with the roots that go down so deep into the past, that take hold on the animal; but thy petals are unfolding sunward and Godward: thou shalt at last float upward and be free!

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V.

THE FACTORS OF EVOLUTION.

**“ Meanwhile, until Philosophy  
Sustains the structure of the world,  
Her workings will be carried on  
By hunger and by love.”**

**SCHILLER.**

## V.

### *THE FACTORS OF EVOLUTION.*

WHEN the theory of Evolution is reduced to its simplest terms, it means that the animal world as we see it and know it to-day, was developed by continuous and progressive changes, according to certain laws, out of the animal world as it existed yesterday: and that, according to the same laws, the animal kingdom of to-morrow will be deduced from that kingdom as it exists to-day. There has been a principle of continuity and there have been processes of variation.

But this is not the entire story. There is something more. What are the causes which have produced the variations and the progressive changes? What are the Great Factors that enter into the processes of Evolution? In other words, one may put the question this way: There has been the continuous, ascending change from form to form; this process has taken place according to certain regular methods. It has been impelled by forces within

and not by interference from on high. But why have these forces taken a certain direction? What has determined all this? Why are the changes such as we find them? Why have the particular results which we witness been brought about? Yonder sweeps the great river; what has determined its course?

We do not know all the elements. The vast territory has not yet been thoroughly explored. "The next step," says Dr. David Starr Jordan, "is to recognize that there may be an unknown factor or factors, which will cause quite as great a surprise as Darwin's. The feeling that there is such came to the writer in 1890, in considering the want of an explanation for the definite and apparently purposeful character of certain variations. Since then a similar feeling has been voiced by Romanes and others, and quite lately by Scott; but the most extreme expression of it has recently come from Dr. Driesch in the implication of a factor not unknown, but unknowable."

In the meantime, with the understanding that the question is not closed and while waiting the light of further investigation, we shall indicate some of the most important elements in the process of evolution that are now generally accepted and recognized by sci-

entific men. These are (1) Environment, (2) Use and Disuse of Organs, (3) Natural Selection, and (4) Sexual Selection. To these Romanes adds Physiological Selection. But for the purposes of a popular exposition, we shall confine ourselves to those which are most commonly known. It must be understood that it is not always possible to distinguish clearly between the action of these factors, to point out unmistakably the exact part played by each one, where it leaves off and another begins, or how far they operate together. It must also be understood that different scientific authorities emphasize differently these various elements, — while all acknowledge their presence and importance.

## I.

### ENVIRONMENT.

The first of these factors, and the one operating earliest, is the pressure of a changing environment; or to put it in another form, influence of physical circumstances.

In this age-long work, what elements have wrought, — heat and cold, wind and wave, sea and land, night and the sun, mountain and cave, river and forest, — modifying the struc-



ture, painting the hues, determining the destiny of the animal races that have sprung up on the bosom of the earth! Through the first stages of Evolution, environment is well-nigh omnipotent, and in any stage it is powerful. Instead of the eye having been originally designed and created to behold the light, the action of light upon sensitive parts of the organism, through untold centuries, produced the eye. Instead of nerves having been made outright to respond to the touch of wind and heat and earth and ocean, these and other elements wrought in Nature's workshops to produce the nervous system, that wondrous harp so responsive still to Nature's handling.

What the environment accomplished in those dim ages, may be inferred from what we see to-day. The brine-shrimp changes its form and color, according to the amount of salt in the water it inhabits. English oysters, according to M. Costa, transported to the Mediterranean, become rapidly like the true Mediterranean oysters, altering their manner of growth and forming prominent diverging rays. The cats of Mombas, on the coast of East Africa, are covered with short stiff hair instead of fur; and it only requires about eight weeks residence for a common cat from another coun-

try to drop its coat of fur, and take on the fashion of the Mombas cat. Horses kept for several years under ground in the Belgian coal mines, become covered with a soft coat of fur like the mole. Such are some of the changes produced among animals by the very elements in which they live.

Food must be included as a part of environment. Among insects new species are sometimes originated by changes in food. The larvæ of a species of Texan moth fed on a new food plant developed into imagos so modified as to appear new species. In the case of certain birds, organs have been changed by the same agency. A sea gull was kept in captivity where it could secure only a grain diet, the effect of which was to transform the stomach, normally adapted to a fish diet, into the gizzard of an ordinary grain feeder such as the pigeon. Holmgren reversed this experiment and fed pigeons for a long time upon meat, when the gizzard became a carnivorous stomach. Color is largely dependent upon food. Bullfinches become black when fed upon hemp seed, and the green parrot of South America when put upon a diet of the fat of certain fishes, lays aside its green mantle for a holiday garment of red and yellow. From such illustrations coming under our observation to-

day may we conjecture how mighty a force was the pressure of environment in those twilight ages when the earliest forms and structures were evolved.

## II.

### USE AND DISUSE.

The next of these factors, and the one which must have immediately followed in the order of nature, is use and disuse of certain organs.

It really marks an advance in the scale of evolution, for it implies some degree of voluntary motion.

It stands closely related to environment; for environment is constantly changing about the animal; and when the animal becomes capable of voluntary motion, it may itself change its environment, by removing to another locality. Those organs or parts that are necessary under certain circumstances, are developed and strengthened; those that are not necessary dwindle and perish. The useful members are transmitted by heredity, the useless ones appear as rudiments.

"There is no greater anomaly in nature," says Professor Owen, "than a bird that can not fly." Yet there are several kinds of birds in this very condition. In some of the Oceanic islands are

birds that are almost wingless. What is the explanation? The time came when they did not need wings. Why? There are no beasts of prey in the islands mentioned. The larger ground-feeding birds seldom take to flight except to avoid danger. The absence of danger, when it extends through centuries, makes them neglect their wings and forsake the paths of the air. It takes opposition, even in human life, to develop the wings of the spirit and keep us in the upper regions.

Another illustration. In some of the Kentucky caves, several kinds of animals are blind, others have actually lost their eyes. In some of the crabs, the foot-stalks for the eyes remain, though the eye is gone. Mr. Darwin very finely remarks, "The stand for the telescope is there, though the telescope with its glasses has been lost." Living for generations away from the sun, the organ of sight has perished through disuse. The same penalty is visited in the intellectual world. He who prefers darkness to light, who closes his mind to the world's unfoldings of truth, shall lose his power of mental vision and dwell in darkness, though the blaze of noonday be upon the world.

On the other hand, Professor Stillman caught a cave rat that was blind; then "exposed it for

several weeks to a regulated light, when the animal began to evince a sensation of light." The organ of vision, almost obliterated by long disuse, was capable of recalling, by renewed use, some degree of its original power. "It is a law of life," says Mr. E. P. Powell, "that when energy is withdrawn from one part of a structure, additional energy will be applied to some other part; so we find the ostrich and cassowary possessed of extraordinary legs as they lose or abbreviate their wings."

### III.

#### NATURAL SELECTION.

The third factor of Evolution, still closely related to the other two, is termed Natural Selection. This is distinctly Mr. Darwin's contribution to the subject of Evolution.

What do we mean by Natural Selection? It is but fitting that the great master should define his own terms: "There is no exception," he says, "to the rule that every organic being naturally increases at so high a rate, that if not destroyed, the earth would soon be covered by the progeny of a single pair." This is the ground-work of natural selection. What is the result? Away back in the animal kingdom

began the old struggle that repeats itself in human history, — the struggle for something to eat and for standing-room upon the earth. In this struggle for existence, which will win the victory? Which will win food and place? Which will survive? In this struggle, the Scripture proverb is reversed: for the race is to the swift and the battle to the strong. The weaker in mind or body inevitably go down in the contest.

To complete Mr. Darwin's definition: "As many more individuals of each species are born than can possibly survive; and as consequently, there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be *naturally selected*. From the strong principle of inheritance, any selected variety will tend to propagate its new and modified form."

The struggle for existence takes a three-fold form. The first form of this contest is with surrounding physical conditions. The organism must be adjusted to its environment. If it is incapable of this adjustment, there is an end of it. Transport your tropical animal to the

arctic regions, and death, slow or speedy, will be the result. Bring from the bottom of the sea the fish that bears the weight of the ocean upon its back and at the surface, the gases in its tissues will expand and tear the fish to pieces. Let the lake be invaded by a current of salt water from the sea, and the fresh-water fish will die. The coral insect demands a peculiar environment for the reef it builds, and can not live near the mouth of a great river where the water is liable to be too muddy, too cold, or too fresh. The insects of Madeira, except the flower-frequenting forms, have become wingless. Those which attempted to fly were swept out to sea by the heavy winds and perished, while those which varied in the direction of feeble powers of flight, which essayed not the perilous journey on the blast, have survived. They accepted their environment and lived. On the other hand, the flower-frequenting insects, those whose habits of life made flight a necessity, found strength in the winds which destroyed their neighbors. Thus the struggle with environment means defeat for those who cannot adjust themselves, and victory for those who can harness the elements to the chariot of life.

The second form that the struggle for existence takes is the battle with enemies. Nature,

if we could see the facts that are not so patent, would present, in spite of its beautiful aspects, a vast field of carnage. How we love the songs of the birds as they sing through the summer days in the tree-tops; but we forget that they live mainly on insects or seeds, and are thus constantly destroying life, while there is not a note of regret in their music; and we also forget that these songsters, their eggs and their nestlings, are in turn destroyed by birds and beasts of prey. In these battles with enemies, throughout nature, the element of strategy plays an important part. Color and mimicry are most relied upon in protecting organisms against the assaults of enemies or in escaping the detection of intended prey. Thus has been developed "the tawny color of the larger animals that inhabit the desert; the stripes upon the tiger which parallel with the vertical stems of the bamboo, conceal him as he stealthily nears his prey; the brilliant green of tropical birds, the leaf-like form and colors of certain insects, the dried twig-like form of many caterpillars, the bark-like appearance of tree-frogs, the harmony of the ptarmigan's summer plumage with the lichen-colored stones on which it sits, the dusky color of creatures that haunt the night, the bluish transparency of animals which live on the surface of the sea, the



gravel-like color of flat-fish that live at the bottom, and the gorgeous tints of those that swim among the coral reefs."

The third form that the struggle for existence takes is between organisms of the same species. Darwin says: "As the species of the same genus usually have, though by no means invariably, much similarity in habits and constitution, and always in structure, the struggle will generally be more severe between them, if they come into competition with each other, than between the species of distinct genera. We see this, in the recent extension over parts of the United States of one species of swallow having caused the decrease of another species. The recent increase of the missel-thrush in parts of Scotland has caused the decrease of the song-thrush. How frequently we hear of one species of rat taking the place of another species under the most different climates! In Russia the small Asiatic cockroach has everywhere driven before it its great congener. In Australia, the imported bee-hive is rapidly exterminating the small stingless native bee. One species of charlock has been known to supplant another species; and so in other cases." This is the struggle for existence in its triple form. Those organisms which successfully adapt themselves

to external circumstances, which prove too strategic for their adversaries, or too strong for them, are said to be selected by Nature for survival. The saving qualities in these survivals are perpetuated by the law of heredity and transmitted to other generations.

#### IV.

##### SEXUAL SELECTION.

It will be necessary to say but a word upon the last-mentioned factor, Sexual Selection, held by Darwin and by most of the naturalists who have succeeded him, to be subordinate to and largely involved in natural selection. Sexual selection comprises the battles between the males for their mates, and also the choice exercised by the females. In the first instance, it is the strong again who win the victory, and who determine the character of future members of the species. In these rude and brutal tournaments among the chivalry of the animal world, the knight with the sharpest tooth, or longest claw, or most formidable spur, or toughest muscle, obtains the prize of the combat. In the second instance, Clodd says, "There is competition less fierce in character, if not less fatal to the weaker or unendowed, strength giving place

to grace of form, brightness of color, and witchery of song, the females making choice of the male who by his beauty of form, color, odor or voice attracts them most; or who, as among the highest species, has wealth or good social position."

Enough has been said to give some idea of the operations that went on through incalculable ages. Outward circumstances wrought upon the plastic material. Animal organism was the clay, environment the potter. Then came a little more intelligence as the result of this constant action of external conditions, and the organism, little by little, began to determine what parts were needed, and to use them, leaving other parts to shrink and wither from neglect. Then came the great battle for life, in which those organisms whose advantages were greatest, whose parts and qualities were most useful for the fight, survived and transmitted their advantages, by heredity, to their descendants.

These are the great factors that have wrought together, and that are still, to a greater or less extent, at work in the world. Still do we feel the pressure of environment; still does use of an organ or faculty strengthen, while disuse causes weakness and atrophy; still does the

great struggle for existence cover with its battles the face of civilization itself. But this is not all. With the appearance of man, a new and higher element is introduced, however far it may yet be from throne and scepter — an element described by a distinguished modern scientist as “conscious, voluntary co-operation in the work of Evolution, a conscious, voluntary effort to attain an ideal.”

With the development of this higher factor, a new element is introduced into the processes of Evolution. It takes control, quickens the rate, and lifts the entire course of development to a higher plane. This “voluntary and rational factor” not only now superintends and directs, asserts its lordship and supremacy, but “transforms all other factors, and uses them in a new way, and for its own higher purposes.”

Up to the time this factor is introduced, nature operates through fixed and necessary law, without the will or co-operation of the thing which is acted upon. Nature does not ask whether the organism will be modified by its environment or not, whether it will be a party to the struggle for existence or not. Winds blow, waves beat, the sun shines, and the night darkens, modifying structure, painting the exterior with gay colors or sober, and the bird or

beast, or creeping thing, has nothing to say, can make no intelligent suggestion, can not help or hinder, to any appreciable extent, the forces at work. The battle for food and place goes on; but if nature has furnished the wretched struggler no advantage, it is mercilessly beaten down in spite of any instinctive protest. Nothing it can do, if nature has been unmindful, will avail in the pitiless contest. Then, too, in Organic Evolution, the forces are pushing from beneath. They keep on pushing in Human Evolution; but man now consciously co-operates and helps to push. He now realizes that he is a part of nature and one of her latest forces. But he is moved not only by the impulse from below, the push of the past, but also by an inspiration that comes from something he sees to be attained, some shining goal to be reached by him and his race. In man nature first becomes conscious of the end and aim of her age-long effort, — first catches the light upon the highest peak of the mountain up whose sides, steep and rough, her countless generations have toiled. That peak is the unfolding and perfection of the spirit of man.

## VI.

### EVOLUTION OF MORALITY.

“ Every natural process is a version of a moral sentence. The moral law lies at the center of nature and radiates to the circumference. It is the pith and marrow of every substance, every relation, and every process.”

EMERSON.

## V I.

### *EVOLUTION OF MORALITY.*

IN his *Dissertation on Ethical Philosophy*, Immanuel Kant exclaims: "Duty! Wondrous thought that workest neither by fond insinuation, flattery, nor by any threat, but merely by holding up thy naked law in the soul, and so extorting for thyself always reverence, if not always obedience; before whom all appetites are dumb, however secretly they rebel; whence thy Original?" We shall endeavor to answer in the light of the scientific doctrine we are discussing. What has Evolution to tell us in regard to the origin and development of the human conscience, the moral sense, — the thing within us, however it may be described, which says "ought" and "ought not"!

In our studies up to this point, we have traced the descent of man, body and mind, from ancestors who swam the seas, crawled upon the earth, swung from tree to tree in the thick forests. The doctrine of special creation has been set aside. Organ for organ, limb for limb,



bone for bone, the human anatomy tallies with the brute; faculty for faculty, the human mind corresponds with that of the higher animals. We have already gone over these points in detail. In all this research, we have discovered no indication of special intervention and no place for it. The law of derivation holds in every department. It is supreme and inclusive. It throws its boundary line around sun and soul!

There is one reservation made, however, even by many who accept the Development Theory, — that is the *Moral and Religious Nature*. Let us deal more particularly now with the development of conscience. There are those who recoil from the statement that man's moral nature is a part of the evolutionary product. They say, "Surely, the spark of conscience was immediately kindled from the fires upon the altar. It is the direct work of God." But it has been pointed out already that we find the germs of conscience, down among the lower orders of being, long before we reach man. We find them in the instinct of self-preservation that prompted the animal kingdom to the great struggle for existence. We find them in the social instincts that made it possible for animals to live together. These instincts, inherited by

man, have been developed and shaped by experience in the human period. To trace their unfolding from this origin is our present object.

### I.

First of all, let us try to place ourselves in imagination back at the time when man had become differentiated from the man-like apes. What was his condition when we are first at liberty to call him man?

If we take for our starting point upon the journey backward, the lowest known savages such as the Fuegians, "whose very signs and expressions," according to Mr. Darwin, "are less intelligible to us than those of the domesticated animals, men who do not possess the instincts of those animals, nor yet to boast of human reason, or at least of the arts consequent on that reason," — and then remember that the Fuegian is a development and an immense advance on the primitive man, we shall begin to obtain some idea of that strange creature who, one day in the dim ages that have swept into the past, caused consternation in the forest by getting down out of the trees and walking upright upon two legs. That move was the making of man. What the chattering denizens

of the branches above him thought of this new aristocrat, we cannot tell. Doubtless there were some sarcastic remarks and ominous prophecies. They probably reviled him for thinking himself better than his neighbors, and wondered if trees were no longer good enough for him to live in, and if he thought he could get along on two legs when all his ancestors had used the rest; and what he was going to do with his two fore legs, at any rate, if he did not use them for walking. Such, I suspect, was the greeting that this primitive man received when he made his bow to the universe thousands and thousands of years ago.

This primitive man what was he? How shall we describe him? A creature of "strong instincts, uncontrolled and fitful emotions, small faculty of wonder, and nascent reasoning power; unable to forecast to-morrow or to comprehend yesterday; living from hand to mouth on the wild products of nature." As to clothing, the fig-leaf aprons of Eden were a tremendous advance upon his wardrobe. As to habitation, he found shelter in caves and jungles. As to arts, he was entirely ignorant of even the simplest ones. Possibly he knew how to handle a club or hurl a stone; but when he began to chip the stone into a rude instrument he made

a great stride in civilization. To him it was an event equal in importance to the application of steam or electricity in the modern world. He had not discovered the use of fire, and consequently cooking was unknown. This primitive man was without morals rather than immoral. Distinctions between right and wrong had not yet been developed. He did not know that a thing was bad or good; he only knew that it hurt or that it did not. He had the two strong instincts of which I have spoken, — instincts inherited from the animal. He was “strong in his need of life and vague sense of right to it and to what he could get, but slowly impelled by common perils and passions to form ties, loose and haphazard at the outset, with his kind, the power of combination with them depending on sounds, signs and gestures.” This was the material out of which conscience was to be evolved, these were the conditions out of which moral standards were sometime to be formed. So far is conscience from being a special divine manufacture, that it is still in process of formation, and moral ideas and ideals are themselves constantly changing. The things supposed to be armed with the sanctions of the Almighty yesterday, are cast aside as evil to-day. That which the conscience of one genera-

tion demands, is buried under the curses of the next. The reason of it is that conscience is not finished, but is still growing; and that moral standards are constantly becoming higher and higher, as we discover by investigation and experiment what is demanded by the true welfare of the individual and of society. But this in passing. One point more — this primitive man was without family, the promiscuity of brutes obtaining. This is his condition. What can be made out of him? And how shall it be done?

Emerson, in writing of the origin of the English, says: "It took many generations to trim and comb and perfume the first boat-load of Norse pirates into royal highnesses and most noble knights of the garter; but every sparkle of ornament dates back to the Norse boat." It is a still more difficult problem that presents itself in the primeval forest. Nature must take this primitive man, — this wild, untamed, unclothed, unmoral creature, and produce in him a sense of right and wrong, conscience, regard for his own highest welfare, regard for the best interests of others; and must teach him as well, in what those best interests consist. From this original mixture of the brute and savage, must come the moral sensitiveness of a Jonathan Edwards, the sympathy of a Howard,

the benevolence of a Shaftesbury. It is a long, long road; but it will be trodden in triumph. From this primitive man, nature will at last evolve a being who will regard the interests of others as well as his own. The dominion of tooth and claw will give place to the dominion of love. And the possibility of it all, "every sparkle of ornament," is in the savage breast; and in the bird and beast and creeping thing which were before the savage. As some one has said, "From the very outset of life, there have been principles of super-fecundity and overflow, and instincts of solidarity and sympathy involved, that irresistibly carry the individual beyond the circle of his own interests. In the simplest cell, which in obedience to the expansive tendency of life, splits into two, or forms, with its excess of protoplasm, the nucleus of a new cell, the philosophic eye beholds the germ of the moral law and the promise of the Beatitudes."

## II.

How, then, does Nature begin this age-long process? How does she teach man his elementary lessons in morals? What are the influences that play upon him? How are the educating experiences produced?

## ENVIRONMENT.

The first thing that man would recognize after his advent would be the external world, the Environment. He learns his first lessons, gets his first ideas, by contact with the elements. He gradually finds that there are great forces around and about him. There are powers he must learn to respect, even though it be through fear. The heat melts him, the cold freezes him, the wind seizes him and hurls him against the rocks, the waves beat upon him, the earthquake shakes the ground at his feet. He must learn to adjust himself to these forces. It is not so easy. He does not handle himself well. He does not move with alacrity. We must remember that he has just risen to his feet. The upright attitude is by no means a comfortable one. He soon gets tired, — just as many of his latest descendants do. It is much pleasanter to sit beneath the trees, or “lie a-basking in the sun.” But nature says, as did the policeman to poor Joe, “Move on, move on!” Nature says, “It is dangerous to stop.” Then, too, our primitive man feels the pangs of hunger. There are berries in the forest, there are fishes in the stream; but he must make an effort to get them or he will perish. The

alternative was work or starve. Thus do the elements shape and mold him; the rude necessities of his savage existence mark out for him certain courses of conduct; they drive him into the pathway that leads to morality and civilization.

What are the qualities that this play of elements is calculated to produce? The struggle for existence has not only sharpened the intellectual faculties of man, but has drilled into him courage and industry; has made him realize that idleness is death. Primitive man finds that he cannot have his own way with wind and wave, with earthquake and frost. Not yet has the time come when he can make them do his bidding; so he must submit to them. Not he to the sea, but the sea to him says, "Thus far and no farther." He has no choice but to obey, or be overwhelmed. Thus his impulses are restrained, and at least some measure of patience and self-control is elicited. As the results of yesterday's deeds are slowly appreciated, comes the element of prudence which considers consequences. Yesterday teaches him to take to-morrow into his calculations. He begins to realize that the work of to-day will bear fruit in the future, and to shape his actions accordingly. The experiences



of the present will be repeated. The things that give satisfaction or pleasure now will do so another time. The things that hurt this time will hurt the next. Thus does he find the things that help and hinder, the things that give physical comfort or pain. He learns to do the first and leave the second undone. He reaches the point where the ideas "do" and "do not" as applied to certain actions have shaped themselves.

When primitive man finds language to characterize the things that produce his sensations, he uses the terms "good" and "bad." That which helps or gives pleasure, he calls "good;" that which hurts, he calls "bad." Thus, in the physical, he lays the basis for future moral distinctions. These terms will some day be applied to what helps or hurts the spirit, as well as the body. The "do" and "do not" developed through physical experiences of pleasure and pain, will at length be transformed into the "ought" and "ought not" of the soul, before whose royal edicts physical pleasure and pain will vanish "as the chaff from the summer threshing-floor."

In this way does the instinct of self-preservation, whose roots are struck deep down in the brute world, unfold during the early human

struggle for existence into the sense of the useful and helpful for this struggle, or the reverse; from the sense of the useful and helpful and pleasurable in the long conflict with the elements, it develops into the mandates of justice and righteousness in the sphere of man's nobler and higher interests.

There is an Eastern story of a poor sculptor who wished to do honor to his king; but he had no marble wherewith to carve him an offering. So at last he made a statue of common clay and bore it to the palace. When the monarch entered, he demanded who had brought the unsightly thing. The sculptor came trembling from his concealment and told his story. Then the monarch touched the clay image with his scepter and it was transformed into gold. The old fable may serve to illustrate. Some such transformation has taken place in nature. The common clay of instincts and desires that go back to the animal, — clay that we now despise and would gladly disown — has been transformed, — not, indeed, at one stroke, — but by successive touches of nature's marvelous wand into the human conscience, the crowning achievement, the golden glory, of her age-long and tireless endeavor. It is not a result that calls for indignation or shame, but for joy and exaltation.

## FAMILY.

We must now consider another element in the process by which the untamed savage was brought to morality and his moral sense developed. A new factor was introduced when the first FAMILY was organized. The struggle for the life of self begins to broaden into the struggle for the life of others.

The domestic relations, if we may so apply the term, among animals, are not enduring. They quickly dissolve. The young come to maturity very rapidly, and the memory of their parentage does not appear to survive with themselves or affection for them with their parents. The entire relationship, upon both sides, appears to be speedily forgotten. But nature is determined that *man* shall be a domestic animal; that these relationships shall not be evanescent and fleeting; that instead of transient passion, there shall be permanent love. How does nature set about it? How will nature accomplish her task?

Among animals the period of affection lasts as long as the young need care and protection. So long as the nestlings are helpless, the male and female birds will both fight for their defense. But how soon do the young birds find their wings and take their flight! Then the

nest is deserted ; the old relationship is abandoned. But among men, nature prolongs the period of infancy. This idea is one of John Fiske's contributions to the philosophy of evolution. It takes the human infant longer to develop, longer to reach the point where it can do for itself, than the offspring of beasts and birds. As Fiske says, "The animal takes care of himself as soon as he begins to live." Not so the infant. In this fact we have the secret of much that is best in human development. The lengthening of infancy prolongs and deepens the affection of parents. The longer period during which protection is needed holds the father and mother longer together for the infant's common defense. The longer they are kept together, the more they become adjusted to each other's companionship, the more the relation tends to permanence. If other children are born while the older ones are growing up, the story of helplessness repeated awakens new feelings of affection, and adds other ties to the existing bonds between father and mother. Thus does the family at last become established upon firm foundations. The old gregariousness and license become transformed into domestic morality. Thus are born the duties that parents owe to each other and to their offspring, thus is

the sense of obligation to perform these duties, added to the individual's sense of what is due to himself, what is best for his own interests.

It was given to a little child to accomplish the most beneficent revolution in human history. Lying in the shade of the forest, or at the mouth of a cave, upon thy rude bed of leaves, as the savage father and the savage mother, bended above thee; there in the jungle, before priest or altar or ceremony had been invented, — with no witnesses but startled animals and the serene heavens, — thou didst by thine inarticulate cries, by the appeals of thy helplessness for love and care, say to those who gave thee thy being, "For my sake, live together, till death shall part."

#### TRIBE.

There is another element which has played a large rôle in man's moral development. I have spoken of another instinct derived from animal ancestry, that which impelled them to live together in groups. In process of time, among men, it became necessary for families to combine in larger groups; and IN THE TRIBE we have the beginning of society in the larger sense.

These combinations were probably made at

first for the purpose of defense against wild beasts and other savages. But we have here the germs of benevolence and helpfulness. Man must first be trained to help his fellow-man in this rude way, and for selfish purposes. Afterwards the principle thus developed may drop its selfish aspects and take on the universal good. It will be long before the transformation comes. It has not yet arrived in its completeness.

Two motives would act upon primitive man : He would soon learn from experience that if he helped others, even though it was in a brutal fight with another tribe, or in stealing from them, he would himself receive help in his own fights and robberies. He would also very early learn to crave the praise and avoid the blame of his fellow-men. He would soon find that praise was awarded for what helped the general tribal welfare, and censure visited upon what worked against that welfare. The qualities thus developed in a savage state would be bravery, skill and shrewdness. These would secure for his tribe advantages over other tribes.

All his efforts would of course be confined to his own tribe. Here he must check any propensity to steal or murder. He must avoid all that would injure. But outside of his own

tribe, upon members of other similar bodies, he might give free and unbridled range to his propensities to lie and steal and kill. Man had to be trained to be helpful in a very little circle before he could go outside of it. When devotion to his own tribe has wrought upon him sufficiently he can be taught the additional lesson of regarding others in other tribes. But how slow is the process! How much of the old tribal feeling lingers in civilization to-day! How much of it do we find even in lands where the golden rule has been heard, and the story of Calvary! Are race prejudices extinct? Do we feel that we should do unto a negro all things whatsoever we would have the negro do unto us? Do we feel that we ought to love our neighbor as ourselves,—if the neighbor happens to be an Indian? If we were going from San Francisco to Los Angeles and found a Chinaman lying wounded by “hoodlums” at the wayside, would we not be much more likely to imitate the priest and the Levite than the Good Samaritan? Is all class feeling extinct? Do we pay the same respect to the man who works with his hands that we do to the one who employs him, other things being equal? Is religious prejudice a thing of the past? Is there not something of the tribal feeling surviv-

ing when churches set up exclusive claims and read each other out of the kingdom?

The tribal relation was necessary at first to drill primitive man into a sense of his responsibilities to others. It was at first necessary to appeal even to his own selfishness and vanity in order to influence him. But the feeling of benevolence and good will towards a few — thus produced — is destined to go out farther and farther, to include at last the world. While the chestnut is growing, it is protected by a huge coat of mail, armed with spikes, a terror to small boys, as well we know. But when the nut is fully grown, the coat of mail is split open by the frost and cast aside. When the caterpillar is in a certain stage of development, it wraps itself up in its cocoon and has nothing to do with the outside world. By and by the caterpillar grows out of its isolation, the cocoon is left empty, and the butterfly belongs to the whole realm of air and sunshine. So with man. He ought to be through to-day with tribal seclusion and limitation, realizing that the standard of moral conduct is now higher and grander.

The scope of the individual conscience has widened by ages upon ages of experience. The things which are useful and satisfactory to self are at last sought for others also; the things



which hurt and hinder self are avoided and condemned for others. The personal welfare is merged into the social welfare. The individual becomes identified with the brotherhood. It is a long way that the moral nature of man has come, from the original animal instincts, to the grandeur and majesty of human love and righteousness and justice, helped forward to its goal by the struggle for existence, the family and tribal relationships. From what unpromising roots, through what inclement seasons, have these white blossoms been produced! They speak to us of the greater life and purpose behind the entire process, — the greater love and righteousness and justice at the heart of the universe itself.

### III.

The story of the Evolution of Morality has its practical side.

When we come down to the human period, the old law of struggle for existence begins to disappear and Nature devotes her energies to developing other and better qualities than brute force. It is not the ponderous jaw armed with cruel teeth, not sharpness of claw and strength of muscle; it is strength of character at which

Nature aims. It is an impressive and awful fact that every one who leads a careless and reckless and lawless life to-day, is doing what he can to defeat the great purpose of the ages and is putting himself outside the constructive and conserving processes of Nature. To the pupil, as he is led onward in his investigations, — suggests Mr. E. F. Powell, — Evolution says: "Behold yourself now as the final product of all that Nature accomplished by millions of years of construction! You are the last and the highest. Will you now waste yourself? Will you undo this wonderful heritage of beautiful life? Will you turn your face about from moral effort and daily regeneration, and facing towards the beast, degenerate?"

Take the case of one who gives the rein to every desire and every appetite. How many ages did Nature work to teach man something of self control! It was only when he learned the lesson, when he put himself into harmony with law, when he worked with Nature and not against her, that his life was worth anything even in that rude and tumultuous time. He who disregards the principle of self control to-day — who thinks that he can defy the laws written in the universe, and in his own mind and body, and in human society is on the way

to physical and moral destruction, as surely as if he opposed the winds or hurled defiance at the bolt that leaps from the angry sky. His ruin may not be as sudden, but is just as sure.

There is another most solemn lesson from the story I have told. How long did it take nature to build up the sanctity of the home,—to develop from the promiscuous mass of male and female savages, men and women! from the animal license of cave and jungle, human love! Dear to the heart of nature is the home with its foundation of mutual confidence and trust, and its atmosphere of affection. Whatever degrades man or dishonors woman,—whatever tends to social immorality, is helping to hurl humanity back into the awful abyss where animal passion raged, where debauchery ran riot,—that abyss from which Nature lifted humanity by the hand of a little child. One's action, bad or good, does not simply concern himself; it helps or hinders the ages. No man liveth unto himself.

“How wonderful! that even  
The passions, prejudices, interests,  
That sway the meanest being, the weak touch  
That moves the finest nerve,  
And in the human brain  
Causes the faintest thought, becomes a link  
In the great chain of nature.”

Shall it be said that this theory of the derivation of conscience and the evolution of morality leaves us no basis of right and wrong? But is it not true that the deeper the foundations go, the more secure is the structure? Morality is not like the seed in the parable that fell upon the rock and sprang up quickly because it had no deepness of earth, no chance to take root; and withered when the sun's heat fell upon it. The roots go down very, very far. They go down through all the uncounted human ages, down through the struggle for existence, down through the primitive savagery, down into the animal, down into the constitution of the universe, down into the laws of nature, and finally into the great life that is in nature and through nature, permeating and animating every atom and guiding every force. This is the soil in which the roots are struck. Shall not the tree itself stand? Shall it not survive the heats of the sun and the blasts of the tempest? Morality is here, not unsupported and unbuttressed; but "with all the pressure of the universe behind it." Conscience is here, with the sanctions of uncounted centuries,—with the accumulated experiences of an infinite past; conscience, filled with the benedictions of a million useful and pleasant and just deeds

that left their impress behind upon the animal instincts inherited by man; conscience armed with the sword whose edge has been sharpened through the ages by a million pains and fears! Conscience is here to reign in the future as it has ruled in the past. Moral ideas will change as they heretofore have done; but the history of this evolutionary process is our warrant for saying that they will not change for the worse. Moral ideas will become loftier; moral standards more clear and sharp; and the moral sense itself will become deeper and purer and stronger. It will demand not less and less, but more and more; more and more in the way of personal purity and righteousness, more and more in the way of beneficent activity. Consummate flower of the universe, thy leaf shall not wither; thy blossom shall not fade!

## VII.

### EVOLUTION OF RELIGION.

**“ For the earth bringeth forth fruit of herself : first the blade, then the ear, after that, the full corn in the ear.”**

**JESUS.**

**“ The wild man of the woods and the caves anticipated the oracle when he saw spirits everywhere : in individual plants and animals, in a group of individuals like a forest, in the great, wide world. Despise him not for the crudity of his thought ; he was on the right road.”**

**BRUCE.**

## VII.

### *EVOLUTION OF RELIGION.*

THERE are several senses in which the term Religion is used. Let us define. It is not our purpose to discuss religion, as a right attitude of mind towards God and man, — although this is its noblest and truest signification. It is rather our intention to discuss certain ideas which have become associated with this central and vital fact. Our present concern is with the evolution of certain notions concerning God, man's relation to God, the rites and forms through which he may approach God, and the destiny of man himself. In other words: How has the thought of one Supreme Being originated? Whence have we derived our methods of worship? What first whispered to the heart of man the hope that sustains him to-day under the burden of bereavement and upon the edge of the sepulcher? When were the walls of the tomb first pierced by the rays of immortality? Such questions as these define the scope of our inquiry. Perhaps it will be more exact to say



that it is not so much the Evolution of Religion, as the Origin of Religious ideas, that will form our subject.

We have commonly supposed that such ideas as I have mentioned were originally stamped, full and complete, upon the human mind by the hand of God; that they were never developed, but were always essentially what we find them to-day. But this position is gradually being undermined. More and more do we see that nothing is made outright as we find it,—neither man's body nor mind nor religion,—but that everything has grown out of something that went before it. Everything is rooted in the past. The religious sentiments and beliefs that have builded our altars, reared our temples, and carved the emblems of hope upon the monuments of our dead, are the offspring of animal instincts and savage fears and fancies; but none the less powerful and helpful and inspiring because of what may seem their dubious ancestry. Indeed, they are stronger and better and surer, for the generations that lie behind them. That which has been woven into the soul in the loom of the centuries, is more to be trusted than an untried filament of yesterday's making. The sanctions of Religion, as of Morality, are all the mightier for the author-

ity with which the ages have clothed them. The height of the spire, ascending towards the stars, is measured by the depth and solidity with which the corner-stone at its base is laid.

How far can we go back in the study of Religion? We have seen that the very first men began the road that led to Morality in certain instincts which they derived from the animals and shared with them,—the instinct of self-preservation and of combination with their kind. They began at the same time the pathway that led to Religion, and they began with a similar furnishing derived from the same source. “So far as Ethnological inquiry has yet gone,” says Charles Morris, “we seem justified in looking upon the earliest men as but a step beyond the brute, and devoid of any sense of sin, any conscientious scruples, any ideas of divinity or immortality, and any power of abstract reasoning beyond the simplest germs. Man must from the first have been possessed of a spirit of curiosity and of investigation. Even some of the lower animals manifest this spirit. But that he possessed any inherent conceptions, any knowledge not gained by experience, or any innate faculties not found in the lower animals, has grown exceedingly doubtful.”

To curiosity and the spirit of investigation must be added emotions of awe, fear, admiration, affection, which are emotions also found, in greater or lesser degree, among the lower orders. Here are the primary elements of religion. From these all creeds and systems and institutions have sprung. The search into the unknown is prompted by curiosity; the spirit of investigation, faint and feeble at first, easily satisfied and easily discouraged, leads the way. Experience preserves and modifies the results. Those results awaken awe and fear, or love and admiration. And here we have the beginnings of the entire story. From these at last shall come all sacred books and sacred rites. From these shall come the bright consummate flower of Christianity.

Not only does the general theory of Evolution carry us back to a non-religious period in the life of the race, but, within historic times, travelers and missionaries and scholars have discovered tribes and peoples who have no ideas that we to-day should call religious. The original inhabitants of North Australia had no idea of a Supreme Being, or of the immortality of the soul; of future rewards and punishments; good and bad meant simply physical comfort or pain. This accords with the origin

of moral distinctions, as we have already found. Good and bad were what gave satisfaction or hurt. The South Australians had no idea of a Supreme Being; no rites nor ceremonies of worship; nothing but a vague idea of evil spirits. The same is true of the early inhabitants of Ceylon. The early Indians of California, according to Father Baegert, a Jesuit missionary, who had lived among them seventeen years, not only had no idea of God and immortality, but no words for God and soul. They had certain sorcerers whom they believed to possess power over diseases, and of whom they stood in much fear. The Bachapins, a tribe of Kaffirs, had no forms of outward worship, no belief in a beneficent deity; but fear of an evil spirit called Murimo. They also believed in sorcery and in efficacy of amulets. And one of the Fuegians, of whom Mr. Darwin had made a sort of attendant, told him that while the Fuegians believed in signs and omens, they did not even believe in a devil! But this belief in spirits of evil is the earliest notion developed. The world was very strange when the primeval morning of the human ages broke. Men had just risen to their feet, and pushed back the matted hair from their vacant eyes, to take their first look at earth and sky. The

mystery of themselves and of that which they beheld was all to be spelled slowly and painfully out! How?

## I.

When man first rises to his feet and begins to look about him, his surroundings, his physical environment, will first attract his attention. From this he gets his first intimation of unseen powers.

This environment, we have said, would compel man to certain courses of practical conduct, would force upon him the great struggle for existence; but as soon as he learned to do a little thinking, he would try to pierce the meaning of that environment, he would want to know why it affected him as it did, why it was necessary to fight for his existence. What was behind it all?

1. The spur of curiosity drives him to investigate. He soon perceives that the things about him are not fixed and stable. There is motion everywhere. He and other animals move because they are alive. So he reasons: Every object that moves must be alive just the same as we are.

The sun whose rays greeted him on that first morning of conscious human life, does not

stay at the same place where he first beheld it. It moves, it rises, it sets, and disappears. The next day and the next the course is repeated. The moon grows big and wanes away. The stars come and go. Trees wave in the wind. The dust rises and whirls. The stream rushes at his feet. He stands gazing at the hurrying waters when suddenly down falls a rock from the hillside, and rolls across his path. Nothing is stationary. "If each object is not alive itself," the savage says, "there must be something alive in it." He draws no sharp line between himself and the things he sees in the world around him. How can he? He has as yet, no means of judging, save from appearances. Reason is in its earliest infancy, and Science is thousands of years in the future. The belief that natural objects are as much alive as man, is almost, if not quite universal among savages in the historic period,—a fact which shows that it runs far back beyond recorded history. This notion is not religion. We should not even call it religious. But out of it a religious idea may come at last. It seems a barren soil, but it will prove full fertile. Here is the germ, beginning, of all that marvelous unfolding of the human mind and thought in the direction of One Supreme Power. This

belief started when the first man, just emerged from the brute, beheld the clouds forming and changing in the sky, and heard the leaves rustling in the wind. Then did he feel that, in this strange habitation to which he had been introduced, there were agencies and forces at work other than himself, but like himself alive. Ages upon ages untold stretch between this conception, dim and crude, and the Father whom Jesus proclaimed and whose name of Love he wrote in letters fairer than the sun; but surely as the face of the first man is turned away from the animal and set towards the future, this height with glory crowned, will at last be scaled in triumph.

2. But our newly developed man cannot stop here. He must go farther. The spark is kindled and it must burn. He is satisfied that in these rocks and mountains, river and winds, there are beings he cannot see. What kind of beings are they? What will they do to him? Is he going to be safe among them or not? Questions all important for him!

Those who have searched out the ideas of savages still known, or become extinct in historic times, tell us with singular unanimity, that they have no conceptions of good gods or spirits, but only of evil ones, — of such as work

mischief and ruin; who occasion sickness, death, thunder, and every calamity that befalls; who lead them astray, into difficulty and danger; and who even kill. From these later notions, all of them pointing backward, we must conclude that our first man when he investigated the character of the unseen powers, decided that they were evil and bent on harm. What were his reasons?

(1.) That which one does not understand he dreads.

The instinct of the man "new to earth and sky," to shrink from the movements of inanimate things, is precisely the same instinct which causes the horse to shy or plunge when a piece of newspaper is blown through the streets, or a dog (as in the case of Mr. Darwin's dog, when an open parasol on the lawn before him was moved by the breeze) to crouch and growl in a startled way, when there is motion without apparent agency. The whole region of mystery is regarded with fear. Man did not understand the universe, and therefore he peopled it with forces of evil. When knowledge comes, the demons are exorcised and we see that the universe is good and not evil.

(2.) Then, too, our first man attributed to these unknown beings his own disposition and activities.



He argued from what he did know. He was engaged in constant struggle. He was fighting daily through the jungle with wild beasts and wild men like himself. He was ever on the alert against others, as they against him, to gain some advantage, though harm might have to be done, even wounds inflicted, to gain it. He was fierce and resentful when injuries had been perpetrated upon him, and was swift to strike the avenging blow. These beings about him were like himself and his fellows! They had the same passions, were animated by the same motives.

(3.) He became perfectly certain of it, when he believed that he experienced their malice.

Were they not, on every occasion, doing something against him? The rushing stream tried to drown him when he crossed, the falling tree or rock to crush him, the wind to hurl him to the earth, the cloud to smite him with its flying flame. Even the mountain above him sometimes opened in fire and smoke, the earth at his feet sometimes quaked and made him fly for safety. "The Indian in British Guiana," says a traveler, "is occasionally hurt by falling on a rock or a rock falling on him; and in either case he attributes the blame to the rock." This is a survival of the primitive man's way of

looking at natural objects. All the powers about him were leagued to destroy.

The thing that most impressed itself upon the infancy of the race, was the unusual, the exceptional, the violent. The ordinary operations of nature, the beneficent aspects, did not awaken much interest or attract much attention. From what man thought he could see, he began to draw inferences about what he could not see; but all in the same direction. When these evil beings who peopled the universe could not destroy directly, they brought on sickness and misery, and so made life as wretched as possible. This belief is common to all savages whose ideas have been ascertained. It points back to the beginning of human thought. When Burton spoke to the Eastern Negroes about deity, they eagerly asked where he was to be found, that they might kill him; for they said, "Who but he lays waste our homes and kills our wives and cattle?" An old woman, who had the toothache, when told about Allah, offered this prayer: "Oh Allah, may thy gums be sore as mine; may thy teeth ache like mine!" In New Zealand, each disease was regarded as being caused by some particular god. Thus Tonga was the god who caused headache and took up his abode in

the forehead; Mokotiki, a lizard god, was the source of all pains in the breast; another took charge of the stomach; another of the ankles and feet. When the spirit is angry, he comes in the form of a lizard, enters the body and preys upon the vitals, till the object of his wrath dies. Such as these are man's first ideas of beings other than himself. Some day he will outgrow them. Some day the evil spirits will vanish. Some day he will see that the universe is not full of wrath and confusion. Some day he will see that it is full of law and order; and he will understand that behind the law and order, and working through the law and order, is something still greater and better, and that that something greater and better is Love,—love which was before man and nature, and will be after them.

## II.

We have seen how the idea of unseen powers in the universe originated in the mind of man; now arises another question: What is his relation to those powers? They are evil; but how is he to get along with them?

“What man fears, but is powerless to control,” says Mr. Clodd, “he seeks to appease.

. . . Hence, the world-wide custom of averting the wrath of the gods or of buying their favor with sacrifices. . . . Hence, also, the rise of a special class, 'medicine men' and priests, into whose hands all ghastly and ghostly functions fall, and who secure dominance over their fellow-men by pretending to be the mouthpiece of the gods, to forgive sins in their name and to make known their will."

1. These unseen beings, man has decided, are like himself and others of his race. They may be amenable to the same influences. He will speak to them. He will beseech them to spare him, to grant him safety, to help and not to harm him. This is the origin of prayer.

Puerile as the first petition might seem to us, if we could hear it to-day, that was one of the most solemn moments in human history, when the first fear-born prayer of man was spoken upon the air to the invisible spirits around him. All the ages of aspiration and devotion were in it. No doubt it was full of selfishness, no doubt it was for material good, no doubt it was a plea for personal safety; but it was fraught with possibilities momentous.

What the earliest prayers were like, we may learn from the prayers of savages in historic times. "Great Quahootze," cries the Nookta

Indian, "let me live, not be sick, find the enemy, not fear him, find him asleep and kill a great many of him." "Wohkouda, pity me," pleads the Osage, "I am very poor, give me what I need, give me success against mine enemies, that I may avenge the death of my friends. May I be able to take scalps, and to take horses!" "Save us from the tiger and snake and stumbling-blocks," pray the Karens of Burmah. Those prayers of the savage—how their spirit and their very forms persisted, we may find in the book of Psalms in our Bible. "Protect me from mine enemies. Let mine adversaries go down quickly to destruction. Give me peace and prosperity"—is not this the burden of many of those ancient requests of Jehovah? And what is prayer to multitudes to-day, but a thoroughly selfish petition for personal happiness, wealth, and safety? The first man set the fashion for the latest worshiper.

2. But our first man found that it would be better to go a little further. Very often no attention was paid to his simple asking. Those beings were as grasping and mercenary as himself. He must give them something. They must be bought over. And this was the origin of sacrifice.

(1.) The Karens of Burmah say that it is useless to demand anything of the gods without giving a proof of generosity.

The Negroes of Sierra Leone offer cattle, in order to "make God glad very much and do Krooman good." The Ainos of Yesso say, "To thee, Mother Ut, we bring brandy in bowls, and fat in both hands. Give prosperity to the king's son, to the king's daughter, and to all the people." An early missionary account of a rock demon worshiped by the Huron Indians will show with what absolute personality savages can conceive of such a being. In the hollow of a certain sacred rock, it is related, dwells an "oki," a spirit who can give success to travelers, wherefore they put tobacco into one of the cracks, and pray thus: "Demon who dwellest in this place, behold tobacco I present to thee; help us, keep us from shipwreck, defend us against our enemies, and vouchsafe that when we have made a good trade, we may return safe and sound to our village." Dr. Bastian relates that a Bengali cook was seized with an apoplectic fit, which his Birmese wife declared was but a just retribution, for "the godless fellow had gone day after day to the market to buy pounds and pounds of meat, yet in spite of her remon-

strances, would never give a morsel to the patron saint of the town."

(2.) In course of time sacrifice would naturally take various forms.

Sometimes the prayer, backed by the gift, seems answered. Then the petitioner, in gratitude for his success, — having made a good bargain, or slain his enemy, or accomplished some other laudable and pious enterprise, — comes with an extra gift to the spirit, and lays a thank-offering upon the altar. At other times things go wrong. These unseen beings are just as capricious as their worshipers. Possibly the food left for their consumption has not entirely agreed with them. They get angry. They cause the boat to be upset. They let the enemy get the victory. Then the poor savage must cast about for something to appease the wrath of the offended spirit, and he comes with more abundant gifts or better chosen ones, — a sacrifice of propitiation. There are times also when things go so very badly that he feels as if he had really not only offended, but actually injured the demon, and then he endeavors to disarm the fury of the demon by inflicting some injury upon himself, — the sacrifice of expiation; or upon some other person or thing in his stead — the vicarious sacrifice.

And here we have the germs of that whole system of rites and ceremonies recorded in the early books of our own Bible,—a system supposed to have culminated in the sacrifice of Jesus to the wrath of Jehovah.

3. Another thing in this connection. It would be observed that in some cases, the answer to prayer followed more promptly than in others; that in the case of certain ones, or a certain one, the sacrifice seemed more acceptable and efficacious. The question was a very natural one: Cannot *he* offer prayer and sacrifice for the rest of us? This was the origin of the priest.

He is felt to have special influence with the spirits. He accepts the situation. He endeavors to enhance that influence by devising magic rites and ceremonies, which he adds to the prayers he is to offer and the sacrifices he is to make. He tries to wrap himself in mystery, and thus play against the mysterious actions of the beings with whom he has to deal. And he does not forget in all this, the influence of mystery upon his fellow savages. The more singular and bizarre his performances, the more they will impress both deities and men. "There is not a nation," says a recent writer, "that has not believed in the efficacy of



incantations; there is none that has not made use of lustrations; or that has not kindled fires to put the demons to flight, or to hinder the dead from tormenting the living." To take a single illustration: It may be a matter of interest to know where we get the original notion of holding days of fasting and prayer,—for the sake of procuring rain in times of drouth, or something of the kind. The priest, whom we most unkindly call the "sorcerer" when we find him among savages, "among the redskins is known as the medicine-man, but among the Kaffirs he is called the rain-doctor." Among the Bushmen "he strives to obtain rain by driving the hippopotamus—the amphibious animal *par excellence*—over the fields," thinking that he will carry some of the watery influence of the marshes and rivers with him. Among some of the African negroes, he throws pitchers into the river, thinking that the gods will pick them up full and empty them over the land. Among other tribes they besprinkle stones with water to attract the cloud-deities. Sometimes, when all other means fail, the saints and holy ones of the tribe are thrown into the river, under the impression that the deities will rescue their favorites, and see the point. Among some of the early tribes in

Russia, the priest had to undergo this bath in person if he failed to secure rain, — a salutary method of treatment that, had it been more generally practiced, would have done much to discourage the impostures of priest-craft upon this long-suffering planet.

### III.

We have now seen how the idea of invisible powers in the universe arose ; how man first tried to settle his relations to those powers ; but there is another question that arises, in this connection : What is to be the destiny of the worshiper himself, — of man ?

He is here, the play of unseen agencies. He is here to battle with the seen. Suns rise and set, seasons come and go. The strife still rages. What is to be the end of it all ? Such questions at last begin to dawn with feeble light upon that poor, primitive intelligence. At last the question is emphasized. This first man knows nothing yet about death. But some day after his fierce strifes with wild beasts in the jungle, he comes back to his cave, and finds that his savage mate lies prostrate. She does not move. He speaks with all the affection he can feel, in his guttural tone, but she does not

answer. He touches her, she does not move. The eyes are closed and will not open. He watches and prowls about the body, feverish and anxious, through the night. The morning begins to send its rays through the forest. He sees her outline in the dim light. Will her eyes open again to look again upon the sun? Eagerly he watches: but the curtains are never lifted. She does not rise. He goes out to his daily battle, with a strange weight upon his heart. What does it all mean? She has never been like that before. Will she waken? Will she move? Will she be with him to-morrow, or the next day? He comes back to find that the wild beasts have been there, and that all that now remains is a few scattered bones, bleaching in the sun! What does it mean? Who shall give answer? It is the first death of human kind. It is the first burden that is laid upon the shoulders of this primitive man. Tossing on his couch of sticks and leaves through that night of loneliness and horror, in his disturbed dreams he sees her again, as she was before the blow fell and the beasts devoured. Together, in visions of the night, they sit in the cave; together they roam the forest paths, together they take up the old round of toil and activity. When the night has passed away, and the

morning again revisits the earth, he wakes believing that he has really seen her, and that she still lives. And this belief would be strengthened by recurring experiences of a similar kind.

The belief in immortality was born in the human heart when the first savage soul, — torn and perplexed by that awful experience of, he knew not what, — beheld in dreams the face and form of her whose bones lay whitening at the mouth of his cave. It was strengthened by repeated dreams; it was strengthened by the shadows he cast in the sun and by the reflection of his image in the stream — suggesting another self. There the foundations of Paradise were laid. Upon that basis were the minarets of the New Jerusalem at last to rise, tipped with the glory of immortality and God!

#### IV.

As we look back over this age-long process, we may see in it the Divine Method by which God was bringing the race up to the full revelation of Himself.

1. Not with scorn or even with pity may we look back to the crude notions of that far-off time.

We stand with uncovered head in the presence

of the wildest savages who ever tried to solve the problem of life and of the universe. God was not far from any one of them, even while they were groping in the darkness, if haply they might feel after him and find him. It was his spirit unrecognized that prompted the search!

2. Why could not the Great Father of us all, the Great Teacher of us all, use such humble and even repulsive methods for the Education of the race?

Remember how faint was the intelligence of these original men! Could you have gone to them with the matured teachings of Jesus? Does it seem horrible that our beautiful doctrine of the soul and its endless career, its destiny of peace and joy beyond, should have come from the shadow cast by the savage in his waking hours, and the dreams that danced thro' his brain in slumbers? Why not? The brightest flowers grow out of soil that covers decay. It is always God's plan to give beauty for ashes. The devout man will see the order that pervades the seeming disorder in the world of thought, will see a divine process and progress; but the doctrine of a religion fully and perfectly revealed all at once, such research as that we have been conducting must effectually tend to destroy.

3. Religion has passed through the process of development; and just as man's body contains relics of the pilgrimage by which it has come, so the religion of even the highest races contains relics of the long process by which man has come from the lowest ideas of savagery to the loftiest of Christianity.

How large a part has the element of fear played in religion? How many centuries it took men to see that the universe was good and not evil; that disasters and calamities were not the work of evil spirits, but indispensable parts of a wise and beneficent system. As men began to understand this, — science pointing it out, — the demons dropped from their thoughts, and slowly but surely the idea of a benevolent and wise and loving Deity rose to the throne of Nature's divided and distracted kingdom.

But for how many Christian centuries did the evil spirit, the Devil, play the most important part?

It was to keep faith with him that Jesus died, — to ransom souls which he held in his relentless grasp. For more than a thousand years it was taught that Jesus made his great sacrifice to pay a ransom price for the souls of men, to the Devil. For another thousand years, it was taught that God himself was but

little better than the Devil, and that the sacrifice of Jesus had to be paid to him, to appease his wrath.

How long has the savage notion survived that calamities are judgments of God?

How much farther along is the Christian who says "God sends floods and grasshoppers," than the savages of Eastern Africa who asked, "Who but he lays waste our homes and kills our wives and cattle?" How much farther along is the Christian who asks his pastor to pray for rain, than the Bushman who makes his priest drive the hippopotamus out of the water across the dusty fields? Hardly so far; for the hippopotamus will scatter and shake a few drops from his reeking hide, while the prayer of the clergyman will coax none from the molten sky.

How many still hold that disease is a divine institution! How much farther along is the Christian who says, "God sent this fever or this consumption," than the New Zealander with his evil spirits who take their abode in different parts of the human anatomy and produce headache or rheumatism?

How slowly do these things die! How much time does it take to rid religious thought of the theology of the primitive forests! Slowly

does the world rise to the nobler conception of God who is over all, blessed forever! Slowly do the clouds lift from his brow, — the clouds of human fear and passion and misconception! Slowly do our terrors roll away before the assurance that he is the “god of all comfort;” slowly does the darkness retire before the assurance that God is light, that he is truth and wisdom. Slowly does fear, the coward, — fear the traitor of the soul, — fear the woeful mis-interpreter of the universe, — hide its head before the glory of that supreme revelation, GOD IS LOVE.





## VIII.

EVOLUTION AND THE FALL OF MAN.

“The fossil strata show us that Nature began with rudimental forms, and rose to the more complex as fast as the earth was fit for their dwelling-place; and that the lower perish as the higher appear. Very few of our race can be said to be yet finished men. We still carry sticking to us some remains of the preceding inferior quadruped organization. . . . The age of the quadruped is to go out, — the age of the brain and of the heart is to come in. And if one shall read the future of the race hinted in the organic effort of Nature to mount and meliorate, and the corresponding impulse to the Better in the human being, we shall dare affirm that there is nothing he will not overcome and convert, until at last culture shall absorb the chaos and gehenna. He will convert the Furies into Muses and the hells into benefit.”

EMERSON.

## VIII.

### *EVOLUTION AND THE FALL OF MAN.*

THE foundation of the prevalent theology is the Fall of the Race in Adam. The Westminster Confession says: "Our first parents, being seduced by the subtlety and temptations of Satan, sinned in eating the forbidden fruit. This, their sin, God was pleased, according to his wise and holy counsel, to permit, having purposed to order it for his own glory. By this sin, they fell from their original righteousness and communion with God, and so became dead in sin, and wholly defiled in all the faculties and parts of soul and body. They, being the root of all mankind, the guilt of this sin was imputed, and the same death in sin and corrupted nature conveyed to all their posterity descending from them by ordinary generation. From this original corruption, whereby we are utterly indisposed, disabled and made opposite to all good, and wholly inclined to all evil, do proceed all actual transgressions."

This statement is clear-cut and comprehensive. There is no mistaking its meaning. In

the Fall of Adam, the entire race fell. We have inherited a corrupt and sinful and guilty nature, because of what took place in Eden. This nature exposes us from birth to the just vengeance of the Almighty.

### I.

This is the theory. What are its proofs? They are drawn, so far as any proofs are offered, from the account of the transactions in Eden, found in the book of Genesis. Let us examine this account and see whether it is sufficient to sustain such tremendous burden.

1. In regard to what is said to have occurred in the garden of Eden, it can only be accepted as evidence, if it can be shown to be actual history. This is clear. We cannot base so important a doctrine upon anything but the solid rock of unimpeachable fact.

That the story of Eden is not history, is the growing opinion of all scholars, irrespective of denomination. They call it myth, legend, tradition, symbol, or allegory, but not history.

Professor Fisher, Congregationalist, of Yale, says: "It is impossible to draw the exact line between the literal facts and the accretion of symbol that has gathered around them." Dr.

Boardman, a distinguished Baptist, treats the whole account as a picture or tableau, — shadowy basis for a doctrine that involves the depravity of all and the damnation of millions. Dr. Ladd, Congregationalist, of Yale, says: "The sources of these chapters are undoubtedly traditional," and adds: "Nowhere else in the entire Bible do we find narratives the genuine historical character of which is more doubtful." Dr. Briggs calls the account a "poem," and speaks of all the Creation chapters as "poems." Professor Drummond, Presbyterian, treats them as nursery tales adapted to the childhood of the world. Heber Newton, Episcopalian, says: "It is not to be read literally and taken for history," and he calls it "a symbolic story," "a prose poem," and says that "to rear upon such a beautiful legend a structure of theology is inexcusable in men of the nineteenth century." But in spite of modern scholarship, the creeds stand just where they did several centuries ago. In spite of modern scholarship, there are multitudes of pulpits that continue either to preach or to assume the discredited doctrine of the fall and the theology that rests upon it.

There are certain elements in the story itself which forbid its classification with history.

The speaking serpent, the tree of knowledge of good and evil, the tree of life, the idea that eating certain kinds of fruit would give wisdom or immortality, — these are clearly legendary or mythical elements. As pictures or symbols, they may be even beautiful; but as history, they are quite as far beyond the pale of fact as the fountain of youth or the dreams of alchemy. Dr. R. F. Horton, who a few years ago delivered the lectures on preaching before the theological students at Yale, says: "It might be thought that the very expressions, 'tree of life,' and 'tree of the knowledge of good and evil,' would immediately show to an intelligent mind that the story is symbolical. The four rivers, again, issuing from one source, especially when two of them are identified as the Tigris and Euphrates, and the other two are most probably the Indus and the Nile, seem to warn us of themselves against looking for any literal accuracy in the narrative. The garden of Eden would have to be as large as a continent to contain the widely-parted sources of these historic streams. The origin of a woman, too, from the rib of a man is evidently a symbolical conception, which is paralleled in other mythologies. Further, a serpent that speaks proclaims itself to be in the region of fable. These

are but a few of the more obvious indications that this second version of the creation is not even meant to be historical." And he adds: "It is a childish misinterpretation that would treat the story as literal fact." But this is precisely what has always been done; it has always been treated as literal fact. This is what, to a large extent, is being done to-day.

The story of Eden and the Fall has so many points in common with similar traditions in other religions, that it may well be classed with them as an attempt to explain the origin of evil.

All nations have looked back. Surrounded by sin, seeing the forces of evil at work, man has sought the explanation of it all. Whence came the present condition? Why is it that man sins and toils and suffers? Whence the powers that make for unrighteousness? He fancies a time in remote antiquity when everything was different. Some one in the past must have done something to incur the displeasure of the gods. From what we have already learned of the primitive mind, we know that this is the first conclusion at which it would jump. Human disobedience and divine wrath must account for it all. The same essential features occur in the various accounts; and while the Jews undoubtedly obtained their



version from Babylon, we find them in Greek, Parsee, Buddhist, Aryan, and Persian tradition. The story of Eden thus takes its place with the other attempts that have so often been made to account for the sin and sorrow that weigh upon the heart of man. The past always wins

“ A glory from its being far,  
And orbs into the perfect star  
We saw not when we walked therein.”

Hesiod, the Greek, sang of the days when man lived happy, “free from toil, from sickness, from evils of any kind.” The Parsee dreams of the time when not only men, but cattle, were immortal; when there was no famine, no toil, no envy, no old age. To the Buddhist, the earth was once peopled with glorious beings, who knew no sin and no want. It was King Chetiya who told the first lie, and the people did not know what a lie was, and whether it was white or blue or black. Then degeneracy began. Men’s lives grew shorter and shorter. King Maha Sagara, after a short and fleeting reign of two hundred and fifty thousand years, was utterly disconcerted when he found the first gray hairs. In the Aryan tradition, Yeina, the first man, passed his life in a state of bliss, until he committed the sin which weighs on his

descendants. For this he was driven out of Paradise, after having lived a thousand years in it, and was given up to the dominion of the serpent, who finally brought about his death by violent means. The Thibetan legend tells us that the first men were perfect like the gods, but that they grew corrupt when they ate of the white sugar-sweet Schima-tree. Hunger came, and the brightness of their faces vanished. They before had wings, but these withered away. Men were thenceforth chained to the earth, and their lives were shortened. The Persian tradition is very similar to the Hebrew. Ormuzd promised the first man and woman never-ending bliss, if they would remain good. A demon, in the form of a serpent, was sent by Ahriman, and they believed the lie he told them that good gifts came from Ahriman, whom they thereupon worshiped. The demon then brought them fruit, which they ate, and thereby lost their happy state. Driven away, they killed beasts for food, and wore their skins; and in the hearts of these unhappy creatures raged envy and hatred, which cursed them and their children. Such are the legends.

It is thought by some that the account in Genesis differs from other traditions by introducing the element of hope, the promise that

the serpent's head should be crushed. But it is not so. The same prophecy, in effect, is found elsewhere. The Egyptians have it that the serpent Assap fights against the sun and moon, but is pierced through by Horus. In Persian myth, the serpent is cast out of heaven, and is to be conquered by Mithou, god of the pure sky, and chained 3000 years. The Scandinavian legend says that "Thor, the first-born of the highest God, a mediator between Him and man, fights with death, and in the struggle is thrown on his knees; but he breaks the head of the Great Serpent with his club and slays it at the price of his own life." In the oldest Hindoo temples are two figures of Krishna in one of which the serpent clings round him and bites his heel; in the other of which he is trampling on the crushed head of the serpent!

For these reasons we cannot accept the story of Eden and the Fall as history. There is no more testimony in its favor when it appears in Jewish or Christian writings — when it appears in Genesis and in the quotation from Genesis by Paul — than when we find it in Persian or Buddhist Scriptures. It is not the book in which we find a statement that gives it credibility; it is the character of the statement itself. If it be intrinsically impossible or im-

probable, it matters not whether the literature which contains it be Jewish or Greek or Christian. We are to apply the same rules in all cases. And let us remember if this account of Eden and the Fall is not history, the current creeds of Christendom, not yet disavowed or revised; the theology still assumed, even where it is not directly preached, — these have no footing in fact, they are but “such stuff as dreams are made of,” they but cumber the intellectual ground of the Church and the world, and should no longer be allowed to impose upon the human understanding.

2. The silence of the rest of the Bible upon this subject is very significant. If this doctrine of the fall is so overwhelmingly important as the creed and theology affirm, it is certainly remarkable that but a single one of all the Bible writers, outside of Genesis, should ever have referred to it.

Nowhere in the Old Testament, after we leave these opening chapters, is this story of the Fall mentioned to account for the sins of mankind.

In no place is sin spoken of as a “nature and that nature guilt,” and the whole capable of transmission; everywhere evil is concrete. Definite thoughts and actions, not nature, are sins. Everywhere it is assumed that sin is the

result of choice and not of inheritance. Each man is spoken of as the author of his own sins and responsible for his own transgressions. Neither Adam nor the serpent is loaded with the blame of our personal iniquities. Indeed, Jeremiah expressly repudiates the whole doctrine of inherited depravity: "In those days they shall say no more, the fathers have eaten a sour grape, and the children's teeth are set on edge. But every one shall die for his own iniquity; every man that eateth the sour grape, his teeth shall be set on edge." The fact is that the stories in the earlier chapters of Genesis were among the latest additions to the Old Testament, made during the captivity or after the return from Babylon, and much of the substance of Jewish teaching had been worked out long before.

When we come down to the New Testament, Jesus himself never alluded to any such thing as a Fall of Man. He never speaks of original sin or transmitted guilt. He teaches that out of the heart where lie the possibilities of good and evil in us all, come evil thoughts and deeds. These alone are sinful. None of those who were brought up under his immediate instruction, — none of the twelve when they went forth into the world to proclaim his message,

ever said one word about the Fall in Eden, or inherited sin. Paul alone seems to favor the theory, and this is done in one of those arguments for which he has been unduly extolled. It is the logic of the rabbis, and Paul's logic is nearly all of the same kind. It would prove his point to those whom he immediately addressed, those who were familiar with the method and accepted it as the correct one ; but Paul's logic would prove nothing to the modern world. Even Luther said of one of his arguments that it would not "hold water." Paul took whatever he found in the Old Testament that suited his purpose and used it to prove his point. Indeed, he sometimes misquoted, and in other places, he interpolated his own explanations as if they were part of the original text. In the present instance, he wished to show the universality and effectiveness of Christ's work, and in order to do it most strongly and conclusively, he used the story of the Fall that the Jews brought back from Babylon. There it had lain in the Old Scriptures unused ; to the mind of Paul it furnishes the dark background of human sin, against which the glory of Christ's redemption might shine with greater distinctness. Dr. Horton, whom I have already cited, says : "No one, for example, can study care-

fully the use which he (Paul) makes of the Old Testament without observing the inexactness of his quotations and the interpretation, often quite unjustified by the original context, which he puts upon the venerable words. To cite him as an exegete of the ancient Scriptures, would be obviously absurd." It is hardly too much to say that never was a theological structure so monstrous reared upon so slender a corner-stone. The boasted granite melts into legend and symbol. The account of the Fall recedes into the twilight of fable.

## II.

Let us now pass on to the evidence that man has risen and not fallen ; that he did not begin perfect and deteriorate ; but that he began low and imperfect, and has been slowly but surely gaining in character and in moral power. Everything points to the conclusion that man began at the very bottom, and has since been struggling painfully towards the summit.

1. First of all we have the testimony of Science. If anything is made clear by modern research and investigation it is that man was not created full-grown in body and mind, with established character ; but that he came up

through the animal and started upon his human career with simply a few instincts inherited from the orders below and behind him.

Evolution shows us how one form of life developed into another, along a certain line, always retaining some of the old characteristics, but finding and adding new ones, until we come to man, the crown and completion of the upward trend. The proofs of this ascent are to be found in the human body and the human mind even to-day. Bone for bone, organ for organ, faculty for faculty, the anatomy and intellect of man tallies with the anatomy and intellect of the higher mammals. Instinct for instinct — that of self-preservation and that of combination with others of like order and kind — these are the same in all. The whole history of the previous development from type to type of the lower kingdoms is repeated in brief in the pre-natal existence of man. After birth and in mature manhood remain vestiges of the past that are veritably connecting links with the animal dominion. The rudimentary organs and muscles and glands that point back to ancestors in which they served a purpose useful and good, remain in man sometimes to menace and torment, but always to stamp him indelibly with the marks of his origin. These



are proofs which must stand unshaken against any legend from the dim, uncertain speculations of the world's childhood, about a creation in a moment, complete and perfect from the dust of the earth and the breath of a God.

And when men came up from the animals — so far were they from being holy and righteous in character, that it took them ages upon ages to learn the difference between right and wrong; and they learned it, not by direct revelation from on high, but through the experiences of their savage life, as these played upon the instinct of self-preservation and the instinct to combine with others. They learned the difference between right and wrong through animal pains and pleasures. They learned to avoid the things that hurt and do the things which brought satisfaction. They learned to live in families; they learned to live in tribes. They learned thus to do many things selfishly at first, which afterwards they did for the good of others. Through these processes did man first come to morality. He did not start with a complete code in his brain and heart. Uncounted centuries crept away — centuries of bitter strife and experience — before the tables of Sinai could be written. As the life-history of the world is condensed in the human embryo,

the moral history of the world is condensed in the human child. To use the words of the late Myron Adams (Congregationalist): "A helpless little bundle of life, it starts along its pathway of experience. It begins to show to the keen-eyed parents signs of intellectual activity. At first its language is akin to that of the young animals, inarticulate. It slowly comes to articulation, gets together its little vocabulary, and has a language peculiarly its own. And as time goes on, it begins its course of volition. It ascends to the wondrous point of distinguishing good from evil. . . . Now the child repeats in small the history of the race. The race began unenlightened, unmoral, and therefore without moral responsibility. Little by little it came on toward enlightenment, toward the appreciation of the distinction between right and wrong, and therefore toward responsibility." And as for his knowledge of God and communion with him, — the first men knew no God, but simply feared invisible beings in the natural objects about them. The idea of One, Supreme, Wise, and Good Being, was the achievement of uncalendared ages. The evidences of these statements we have given in previous lectures. This is the account that Science gives us to-day; and we place it over

against the account preserved in Genesis, which the scholarship of even orthodoxy itself is resolving into the "baseless fabric of a vision."

2. We have also the evidence of History. History, beginning with the present, leads us backward through the past to the earliest men of whom there is any record.

So far as our researches go we find ourselves in the company of savages when we reach a stopping place; and we must never forget that the lowest savage within historic times, is himself a development, — an immense advance upon the primitive man. "We must turn to geology, archaeology, zoölogy and the study of savages of our own times, to obtain correct ideas of the condition of men when they first appeared upon the earth." Mr. Fison, an Australian Missionary, frankly declares that he does not see why the degradation theory should be regarded as an orthodox necessity. Adam appears to him to have resembled a native Australian. Tylor, in his *Primitive Culture*, defends the thesis, that "the savage state in some measure, represents an early condition of mankind, out of which the higher culture has gradually been developed or evolved by processes still in regular operation as of old, the result showing that, on the whole, progress has

far prevailed over relapse." Says Gibbon: "The discoveries of ancient and modern navigators, and the domestic history or tradition of the most enlightened nations, represent the human savage, naked both in mind and body, and destitute of laws, of arts, of ideas, and almost of language. From this abject condition, perhaps the primitive and universal state of man, he has gradually ascended to command the animals, to fertilize the earth, to traverse the ocean, and to measure the heavens." There is a striking passage in Mr. Darwin's *Descent of Man*: "The astonishment I felt on first seeing a party of Fuegians on a wild, broken shore, will never be forgotten by me, — for the reflection at once rushed into my mind, such were our ancestors. The men were absolutely naked and bedaubed with paint, their long hair was tangled, their mouths frothed with excitement, and their expression was wild, startled and distrustful. They possessed hardly any arts, and like wild animals lived only on what they could catch. They had no government, and were merciless to everyone not of their own small tribe." Such undoubtedly were our ancestors — except that the Fuegians must have been an advance upon them. And it is a greater glory to the race to have started from such begin-

nings and to have made its present achievements, than it would have been to start perfect and make shipwreck at the very beginning. It is a nobler testimony to the possibilities of man and to the superintending care of God.

3. The history of morals teaches us the same lesson.

Take such a book as Lecky's *History of European Morals*, or Brace's *History of Human Progress*, or follow the course of any such history as that with which you are most familiar, and see how the trend has been from violence to gentleness, from force to reason, from sensuality to purity, from rudeness to refinement. I know it seems sometimes as if, in the long struggle for existence, the earth had always been the prey of the sharpest tooth and the longest claw; but when we read the history behind the history, we see the tiger and wolf and hyena gradually becoming eliminated from the human being. The higher and better qualities have been rising into the ascendant. In closing an article on the *Secular Changes in Human Nature*, Frances Power Cobbe says: "If this stock-taking of the losses and gains of human nature be anything near correctness, we may in spite of certain serious dangers ahead, surely thank God and take courage, believing

that, in the order of his providence, the ape and tiger are really, however slowly, dying out of human nature, while love and sympathy become stronger as the generations pass away."

In Longfellow's *Saga of King Olaf*, in the challenge of the god Thor and the answer, we find the controlling spirit of rude ages and of the more enlightened ages contrasted :

" Force rules the world still,  
Has ruled it, shall rule it ;  
Meekness is weakness,  
Strength is triumphant ;  
Over the whole earth,  
Still it is Thors-day !

" Thou art a god, too,  
O Galilean !  
And thus single-handed  
Unto the combat  
Here I defy thee ! "

And this is the answer :

" It is accepted,  
The angry defiance ;  
The challenge of battle,  
It is accepted ;  
But not with the weapons  
Of war that thou wieldest.

" Cross against corselet,  
Love against hatred,  
Peace-cry for war-cry !

Patience is powerful ;  
He that o'ercometh  
Hath power o'er the nations.

“ Stronger than steel  
Is the sword of the spirit ;  
Swifter than arrows  
The light of the truth is ;  
Greater than anger  
Is love, and subdueth !

“ The dawn is not distant,  
Nor is the night starless ;  
Love is eternal !  
God is still God  
And his faith shall not fail us.”

### III.

In the light of this discussion, two or three things remain to be said. The doctrine of the Rise of Man, which we set over against the fall, has its practical bearings.

1. One thing is certain, it necessitates a new theology,—a theology not patched with the new thought, but constructed out of it.

If there has been no fall of the race, then the race has never lain under the frown of the Almighty. The earth has never been cursed ; human life has never been blighted ; we have never been shapen in iniquity and conceived in sin. We are under no condemnation

for the sins of an ancestor who never ate the forbidden fruit. If the story of the Fall is not historic, then there is no Great Tempter, the Devil, abroad in this universe. If there has been no fall and no devil and no wrath of God, there is no endless hell flaming and devouring in the future; no lake of fire and brimstone that awaits us when we die. If there has been no break in the divine order, then there is no need of an atonement to restore it — a bloody sacrifice to appease the wrath of an offended God, an innocent victim to take the place of guilty men.

But now, upon the other hand, observe the contrast — the difference is radical. Man has been slowly, but surely rising from the animal. He has been rising because the divine life and force have been behind him and within him, pushing him from point to point towards the grandest height of all — his moral perfection. One theory says, ‘he has been coming down attended by the thunder-clouds and the fiery lightnings of the Divine wrath!’ The other says, ‘He has been coming up, impelled by the Divine life and love.’ Is there no difference between those two conceptions? Man has been slowly but surely rising from the animal; but is not yet fully emancipated from the old in-



heritance of selfish instincts and passions; the lower self is still at war with the higher, and he needs all the help and inspiration possible. There is a place for Christ—as we shall see more clearly in another lecture. There is a place for Christ; but not as the incarnate God, not as the bloody sacrifice, not as the substitute for sinners; but as the human leader and example; as the one who illustrates the victory of the spiritual over the animal; as the one who is able to teach others the secret of triumph. Is there no difference between these conceptions? And the new thought is as positive and constructive as that which it displaces.

2. The doctrine of the Rise of Man is full of encouragement.

“But one verdict is possible,” says Professor Drummond, “as to the practical import of this great doctrine, upon the individual life and the future of the race. Evolution has ushered a new hope into the world. The supreme message of Science to this age is that all nature is on the side of the man who tries to rise. Evolution, development, progress, are not only on her program, these are her program. For all things are rising, all worlds, all planets, all stars and suns. An ascending energy is in the

universe, and the whole moves on with one mighty idea and anticipation. The aspiration of the human mind and heart is but the evolutionary tendency of the universe becoming conscious."

If there were nothing but ruin and degradation behind us, we might well despair. If as we look back, we beheld God's greatest work a failure, his plan balked at the beginning; if we heard nothing but a voice pronouncing a curse on man and nature,—we could hardly have courage to face the oncoming years. But when we see that there was no such failure, that the plan has been carried out, that from small and imperfect and savage conditions, we have come to such splendid dominion, that from the animal we have risen to the spiritual,—no hope is too exalted, no height too difficult, as we turn forward our radiant faces.

We have hope for the world. It is not finished. It is on the way. Even the discontent and dissatisfaction with existing conditions that prevail so often and so widely, that are especially characteristic of our own age, is but the sign of a divine fire that never was quenched and that cannot be; but will always burn in the race. It is the manifestation of the indwelling God who will suffer us to be

satisfied with no present achievement, but will incite us by this very unrest to nobler attainment.

Our watchword is "Forward!" We are not fallen angels, but growing men. Do not sit weeping by the ruined walls of Eden. Look at the vision, full of cheer and gladness, which John floats from the rocky battlements of Patmos: "God shall be with them and be their God. And God shall wipe away every tear from their eyes, and there shall be no more pain, neither sorrow nor crying; neither shall there be any more death!" With the hope of a better future for the world and a deathless future for the individual, we can put our hands to the plow. We are not to sit down in easy, optimistic bliss; but we are to work all the harder for the inspiration of our hope. There is much to be done, — in society, in the general world. There are wrongs to be righted and rights to be secured. There is much to be done in our hearts and lives. But the history of the past, the Rise and not the Fall of Man, is our encouragement.

We shall not live to see the great consummation; we do our little work and lie down by the wayside, but we may by anticipation join the victory.

“The airs of heaven blow o’er me,  
A glory shines before me  
Of what mankind shall be—  
Pure, generous, brave and free.

“A dream of man and woman  
Diviner, but still human,  
Solving the riddle old,  
Shaping the age of gold !

“The love of God and neighbor,  
The equal-handed labor,  
The richer life, where beauty  
Walks hand in hand with duty.

“Ring bells in unrequited steeples,  
The joy of unborn peoples !  
Sound trumpets far-off blown,  
Your triumph is my own.”



## IX.

### JESUS AND EVOLUTION.

“That a person, unique in moral perfection, transcendent in God-consciousness, and the revealer of God’s character of holy love, should appear as a creative moral power, is quite in the line of the observed method of all progress.”

PROF. GEORGE HARRIS.

## IX.

### *JESUS AND EVOLUTION.*

THAT a marvelous life blossomed upon this planet nearly two thousand years ago, is no longer disputed. The mythical hypothesis that reduced Jesus to a figment of the imagination has been discarded. That theory of cloud has rolled away from the granite rock of fact. The existence of Jesus, his life in this world, can no more be doubted than that of Plato or Caesar. The results of that life are supreme and commanding. They have shaped and controlled the events of all subsequent history. The pierced hand has held the scepter of the centuries. This crowning fact we all accept, and accepting, rejoice. There was such a man as Jesus. There was such a career as his. In the consequences of that career, we all have an interest. We are glad for the influence of Jesus to-day, — grateful that there is one life to which we may turn for consolation in sorrow ; for inspiration and help at times when the battle goes hard and our hands grow weary of the sword.



If we were simply to dwell upon the beauty of his spirit, the charm of his personality, the effects of his words and deeds, it would hardly be possible to exaggerate, though the whole vocabulary of eulogy were called into service. But the question that now confronts us is much more difficult to handle. The answer, however reverently stated, will be sure to encounter prejudices. That question is: Granted the greatness and goodness of Jesus, how do you account for him? What is the relation to him of this theory of evolution? Do you mean to include him and his work in the general scheme? Can it be done? And the answer is: Yes; if evolution fails at one point, it fails utterly. We have then a case of that special intervention by a non-resident Deity, which we have repeatedly repudiated. Evolution must include Jesus, or we must abandon the theory. There is no break or flaw or chasm. The process is one from fire-mist to soul; from the soul to its highest specimen and expression. Jesus is as much a product of the laws and forces in nature and in society as Shakespeare or Napoleon. No individual, — whether the humblest savage who fought his fellow-savage through the primeval forests, or the grandest sage and prophet who ever left his benediction upon

mankind, — can be separated from the race. We are one. “The difference,” it has been said, “between the great man and the mass is one of degree rather than kind. . . The average soul has its depths and its mysteries as well as the loftier soul ; and the hero only influences those who are not heroes, because they are in some sort feebler replicas of himself. . . Great rulers and reformers can only rule or reform, because in human nature there are qualities which respond and correspond to qualities in themselves.” The mountain peak that pierces farthest into the sky is of the same stuff as the surrounding hills, and was produced by the same impulse of nature which lifted the entire range from the bottom of the sea.

The idea that Jesus is an exception to all rules, that he is separate from humanity in the manner of his advent into this world roots back in the idea that man is fallen, that human nature is debased and degraded, that the race is sinful and depraved ; and that, therefore, one so pure and exalted as Jesus could not have been born as others are, but must have been miraculously introduced to earth. We have already considered this doctrine of the Fall and consequent sinfulness of mankind, and found that it had no foundation in fact, and could no

longer be regarded as historical. When the story of the Fall recedes into the twilight of fable, the supernatural birth ceases to be a theological necessity. And this view is not now uncommon among orthodox thinkers. Professor George Harris, of Andover, says: "Belief in the birth of Jesus from a virgin, I do not regard as an essential doctrine of Christianity." We are, therefore, left to account for Jesus, as we do for other men, upon the ordinary laws and processes of nature, — remembering that back of these, there are life and love and purpose, and that the "laws of nature are the habits of God." To take another sentence from Professor Harris: "There is no contradiction between the processes of evolution from lower to higher moral life, and the principles, the character and the society, which are realized in Christ." And when we take this position, it is no more difficult to account for him than it is to account for Dante or Washington. They do not transcend the possibilities of humanity. A great man is the product of all previous history.

Just how the great man is produced, we do not know. There is something of mystery about every life that our science has not yet solved — may never solve. We have just said

that it was no more difficult to explain Jesus than to explain Dante or Washington. But it is not easy to explain the Florentine poet or the American general. We do not understand all the factors that, in either case, entered into the result, or how they combined to produce the particular result, — the genius that sang of Paradise and the Inferno, and the genius that achieved American Independence. But both are natural and human.

We may be sure that at least two factors have entered into and do enter into every life, whether great or insignificant: Heredity and Environment. "There is," says Mr. Clodd, "an indissoluble unity between all life past, present, and to come. . . . We are what our forefathers made us, plus the action of circumstances on ourselves."

These two factors it is our purpose to consider, as they apply to the case of Jesus. They will not explain everything; but they will help us to a better understanding of that man, pre-eminently great and good, "in whom evolution concentrated more of human history than in any other, and from whom it has rayed out more widely and beneficently." We shall at least see that he is a development of that increasing purpose which runs through the ages,

one with it, growing out of it, and himself furthering it; and not an innovation in a plan defeated and broken: one with the fabric, albeit of stronger fiber and brighter hue, and not a purple patch upon the torn and bedraggled garment of humanity.

### I.

Whether we can explain it or not, it is certain that the germs of many traits and dispositions, the germs of many forms of genius and goodness, detached from various ancestors, come down the stream of time and unite in a new and unique character, a personality different from all others. Aside from any special theory of heredity, this is the fact.

Or to use the figure of Matthew Arnold, in one of his poems:

"Born into life, man grows  
Forth from his parents' stem,  
And blends their bloods, as those  
Of theirs are blent in them;  
So each new man strike root in a far foretime."

That heredity played its part in making Jesus what he was, can no longer be doubted, since his parentage has been transferred from heaven to earth, and on the side of the father

as well as the mother, made human and natural. When his miraculous origin is set aside, there is nothing to separate him from the race.

If the genealogies given of him in Matthew and Luke be at all correct, what blood of saints and prophets and heroes runs in his veins! The faith of Abraham, the imagination and emotion of David, the wisdom of Solomon, may have re-appeared in him, — together with the gentleness and purity of Mary his mother, and the strength and integrity of Joseph his father. The qualities that characterized him were not new; but they were newly combined and more highly developed. From far-off springs, through many channels, the influences that helped to produce him, poured into the ancestral stream of Jesus. He is the child of his own immediate family, the child of his nation, the child of all the ages that went before him!

## II.

Says Mr. Herbert Spencer, "Before the great man can re-make his society, his society must make him." It matters not what the natural endowments of any man may be, — how exalted his genius or royal his heart, — the direc-

tion of his powers, and the specific form of his activity, will be largely determined by his environment. Let Shakespeare or Dante change time and place, and whatever the result, we should certainly have neither the immortal plays nor the Divine Comedy. Take Robert Burns out of Scotland, and put him at his birth into the jungles of Africa, and the world would never have heard the music of his song. That song would have remained unsung. Bring Napoleon forward a hundred years and whatever the force that resided in him, its manifestation in a similar career would be impossible. Carry him back a hundred years, and again you change the career. "And so," as Mr. Chadwick suggests, "whatever personal force was lodged in Jesus, its manifestation was determined by his country and his race, and by the immediate social and political conditions of his time. Had these been different, the biography of Jesus would not have been the same."

1. Consider the surroundings in which he was brought up, and his early training.

Born into the family of an artisan, he learned his father's trade, and in learning and following it, he learned something of poverty and hardship. But at the same time he was learning something else, and something much more to

the purpose. He learned that sympathy for the lowly which he never lost, and which blossomed into that matchless invitation, "Come unto me, ye that labor and are heavy laden," — which blazed into denunciation against those who "bind heavy burdens and lay them on men's shoulders." He learned that estimate of the world which made him refuse its honors and offices. Brought up to have but few and simple things, he placed righteousness first. It was a poor sort of hut in which he lived, but the peace of God was there. And he learned something of God through the human affection that enswathed him in its atmosphere. The mother-love is taken for granted; but it is an immense testimony to the tenderness of Joseph, his father, that Jesus embodies his ideas of God in the word he learned in the home at Nazareth.

It is related that on one occasion, during the ministry of Jesus, his hearers asked, "How hath this man this knowledge, having never learned?" But they were mistaken. They ought to have known better. He had "learned" just as others do. The daily forms of religion, observed in every Jewish family, were observed in the carpenter Joseph's home at Nazareth. Jesus sat with the others at their devotions.



He heard the conversation that went on in the household in regard to the law and its meaning, the forms and ceremonies and their observance. He received the precepts and counsels of devout parents. "Paradise," said the rabbis, "is at the feet of mothers." He was, indeed, brought up in a Holy Family; but not in the sense that it was made holy by a supernatural event; but made holy by love and goodness,—as every family is holy where love reigns and righteousness is taught. Jesus also heard the instruction in the synagogue on the Sabbath, and he attended the school of the rabbi, held in connection with the synagogue. Schools of this humble sort were common. It was said by wise men, "The world is only saved by the breath of school-children," and again, "Schools must not be interrupted for the re-building of the temple." In these schools the Old Testament was taught, and here Jesus heard many a proverb and parable, and many a story of king and hero. Here he heard the prophecies read; and here he first learned the hope of his people,—the hope of a deliverer.

Of course, no critical knowledge ever came to him from this teaching. Every word, and even letter, of Scripture was regarded as sacred by his teachers. With these teachers, he natu-

rally accepted the assumptions of the day concerning the authorship and contents of the Sacred books. To him there was no distinction between the different parts of Isaiah. He quotes as if the author of both parts of the book were one and the same. So too the Pentateuch was accepted as the work of Moses; the book of Daniel as the veritable production of the Babylonian prophet. While these facts explain his manner of using the Old Testament Scriptures, they show us also the influence of those Scriptures upon his own thought and expression. The condensed wisdom of the proverbs appears in his own terse and epigrammatical sayings; the imagery of David lends wings to his imagination.

While he happily escaped the more pretentious rabbinical schools, with their endless hair-splittings and controversies, he came in contact with a positive liberalizing force that was in his childhood and youth penetrating into distant regions, — the influence of Hillel of Jerusalem. This great man had become president of the Jerusalem sanhedrim about twenty years before the birth of Jesus, and died about the time that Jesus went up to the temple. Renan says: "By his poverty endowed with humility, by the sweetness of his character, by the opposition which

he made to the hypocrites and priests, Hillel was the real teacher of Jesus, if we may say teacher when speaking of so lofty an originality." He taught his pupils such precepts as these: "Be gentle and show meekness to all men." "When reviled, do not revile again." "Love peace and pursue it; be kindly affectioned to all men, and thus commend the law of God." "He who has gained a knowledge of the law, has also gained the life to come." "Do not judge thy neighbor till thou hast stood in his place." "Whosoever does not increase in knowledge, decreases." "Whatsoever thou wouldst not that a man should do to thee, do not thou to him." Such utterances as these had penetrated to Galilee; they were borne as the seeds of certain plants upon the air; they found good ground in the heart of the Young Nazarene.

2. Consider, in the next place, the influence of external nature as a part of the environment of Jesus.

The face of a country has always something to do with the character of a people,—not everything, but much. Scenery itself cannot make a great man; but given the elements of greatness to start with, given the product of heredity,—and scenery will have much to do

with mental development. The landscapes of Scotland did not make Robert Burns; but given Robert Burns, the landscape entered his very nature, and became a part of him; it gave its imagery to his song.

Jesus was brought up in Galilee. In all probability, he was born at Nazareth, and not at Bethlehem, according to the later legend. Galilee and Judea were widely different in natural features. Judea was parched and barren; Galilee was so rich and fertile that the rabbis said the Galilean "waded in oil," and that "it was easier to raise a forest of olive trees in Galilee than one child in Judea." Beautiful for situation was the town of Nazareth. It is described as lying "hid among the mountains, nestling upon the slope of one that rises more than a thousand feet above the level of the sea, from whose top the view, all travelers agree, is most entrancing in its loveliness. If ever, pondering on his destiny, Jesus sought the mountain top for loneliness and peace, the scene outspread before him might well have bred in him temporary forgetfulness of everything but its own beauty. Northward, the poet's vision of an earthly paradise was a substantial fact. Nazareth's straggling village street and the green vale below it lay at his feet; beyond, the

hills rolled on successively until the farthest broke like waves against the mass of Hermon's mighty bulk, its summit covered with everlasting snow; and westward was the sparkle of the sea. 'In a spot like Nazareth,' says Keim, 'it is impossible to imagine a people spiritually destitute, if nature has a word to say in the development of man.'"

Nature did have something to say in the development of Jesus. Its influence constantly appears. The poet's heart is shown in his love of nature. How he used to go out from the haunts of men into places where God's handiwork retained its pristine charm. The silent mountain is his place of prayer, the wilderness his rest, the Mount of Olives his resort, the boat on Galilee his pulpit, the stars and grasses and sunsets and harvests his texts. His soul was in harmony with nature. How many of his images and pictures are drawn from the world around him! The mustard plant, the vines of the vineyard, the hills, the lakes, the lilies are in his talks. The birds of the air sing and the breezes blow in his discourses. He was an interpreter of Nature to Man. The rain falling on the just and the unjust was a symbol of God's impartial bounty. The grass of the field was an example of his care, the fig-tree putting

forth leaves, a sign of his presence. Back of nature was the life of God; back of nature was the thought of God which Jesus interpreted for those who listened to his music.

“O Sabbath rest of Galilee,  
O calm of hills above,  
Where Jesus knelt to share with thee  
The silence of eternity,  
Interpreted by love.”

3. Another element of his environment was the state of religion and society in Galilee where Jesus was brought up.

Galilee was separated from Judea by the country of Samaria. The Jews had no dealings with the Samaritans, avoided contact with them, did not enter their boundaries unless of necessity; and this fact made the isolation of Galilee well-nigh complete. This removed the Galileans from the sacred city, with the holy temple, the priests and rigorous Jewish customs. Thus they were, in large measure, delivered from priestly rule. They neglected many of the rites and ceremonies; and were not accounted orthodox by those who dwelt under the shadow of the temple. So heretical were they indeed, that it used to be asked, “Can any good thing come out of Nazareth?” One trouble with Jesus, when he went to Jerusalem and met the

priests and scribes, was the slight estimate that he set upon the mere forms of religion. To him justice, mercy, and truth, were more than tithing of mint and anise and cummin. What came out of the mouth was of more importance than whether leavened or unleavened bread went into it. The few words of prayer uttered in secret and in silence were more than elaborate and trumpeted devotions on the corners of the streets.

Then too, the strict Jew would not mingle on terms of equality with people of other races. But the Galilean was not strict and did mingle with people of other races. He could not well avoid it. He had to come in contact with the greater world. Attracted by the beauty and wealth of Galilee, many foreigners had settled there. Their children mingled with Jewish children in the streets. They played together heedless alike of Jehovah or Jupiter. They knew nothing of religions, divisions, and strifes. Jesus, as a child, had mingled in these common groups, and he did not see why the Gentiles were not as good play-fellows as Jews. Galilee lay upon the great highways of the world. The sea-routes converged at its shores and were met by the camel-routes from the desert. Caravans were coming and going,

vessels were entering the harbors and departing, carrying the richest trade of the world. People of every nation and every religion were seen in Galilee. The Jewish inhabitants were strongly influenced and even their speech was modified. The Galileans had a foreign accent; and Peter, on the night of the betrayal, was recognized by it. Jews and Gentiles rubbed together in Galilee. Broad and liberal views were current, and it has been truly said that "it was the place of all places for the prophet to rise who should be able to speak to every nation and tribe and tongue and people." Thus Jesus became in his day the great prophet of a more liberal faith. Another fault that was found with him when he went down to Jerusalem was his attitude towards those who were not of the Jewish race. He was a Jew, indeed; but he was more than a Jew. His Galilean life and experience had brought him into sympathy with that humanity which is wider than race, and deeper than race religions.

4. One more element in his environment calls for our attention, which has its political as well as its religious side.

There were those who thought that in order to revive the Church and make it fit for its work, force must be used. It was a tradition



in Israel that the Church could be revived only by rebuilding the kingdom. Restore the ancient glories of David and Solomon, and then will God dwell with us as of old.

The nation must first be made independent. Off with this intolerable yoke of Rome! Then reform the faith of the people, if reform be needed. Consequently, "the standard of the prophet was the standard of revolt." The man who shall come from God must place himself at the head of armies. He must unfurl the banner and unsheathe the sword, and cast out the foreigner whose footsteps defile the sacred soil. So the people were looking for a Prince, a Messiah, a son of David, a great leader mighty with the sword, to rescue the throne from the usurper and rebuild the broken walls of national glory.

All this had its effect upon Jesus. In his boyhood he had witnessed one of these efforts to redeem Israel with the sword. Judas, the Galilean, of whom mention is made in the New Testament, had gathered a little army and proclaimed a holy war against Rome. Tribute to Caesar, he declared, was treason to Jehovah. Judas was a brave man and his manifesto enlisted the sympathy of the people. Now, they thought, a better day is about to dawn; now

the hope deferred from generation to generation is about to be realized; now shall the scepter return to Israel. Expectation ran high and hearts throbbed with excitement. The hour of deliverance is at hand! Jesus, no doubt, shared these hopes, for he came of patriotic stock; but he was at this time too young to leave his father's shop and go forth with the men of war. He could only watch their doings and pray that they might be successful. But successful they were not. For, "in the first onset of the foe, Judas was crushed, and for another generation, the vision of the new kingdom was put off."

To a mind as sensitive and receptive as that of Jesus, such an event must have been fruitful of suggestion. We can imagine his thoughts, at this time, from what came after in his active life. Judas and his followers were killed or scattered in the mountains. Their defeat was crushing and complete. The victorious legions of Rome returned with shining and glittering spears from the battle. Jesus saw them marching in triumph through the streets of his quiet village. And he learned that such uprisings as this of Judas had been tried over and over—and always with the same result. The insurgents were slaughtered and Rome still ruled

the land. What did it all mean? Had God, then, forgotten his people? Were the heavens become brass? Could no prayers pierce the skies? Would the tears and shame and defeat of Israel awaken no pity in the bosom of Jehovah?

But from this conclusion he would shrink. Must it not be, then, that the people are mistaken in his promises? Must it not be that they have misinterpreted his plans? He was led to ask himself "whether, after all, the sword was the thing with which to redeem Israel. Was not the kingdom of God something to be had without the Jewish kingdom? Might not the Messiah be a preacher of righteousness, with no blood on his hands, no claims of royalty, no thought of national independence? Could not the foundation be laid of a kingdom of righteousness inside of men and not outside, in which God should indeed be king; a church distinct from the state, in which all good souls of all nations could be brought? Was not this the true kingdom to be prayed for, this the redemption the Jew might bring, not to Israel alone, but to mankind? If so, it was time to lay aside, and forever, all measures of violence." Thus, we may imagine, was the true idea of the kingdom born into the mind

and heart of Jesus,—that kingdom which cometh without observation, the kingdom within.

This was the environment of Jesus. ~~These~~ were the forces that shaped his hereditary powers. That genius for religion which he received from the past was trained in the home and the school, received impulses from the ideas that were in the air, was broadened by contact in Galilee with all races and nations, found the true idea of the kingdom of God, the right interpretation of Israel's hope, by the failure, before his very eyes, of the methods in which the people had put their trust. Without these influences, it is only reasonable to believe that Jesus would never have become what the world knows and has known for nearly two thousand years. Had he been brought up at Jerusalem, he would have been but a greater rabbi. Had he been born in Greece, he might have been a philosopher; at Rome, a moralist. In Galilee he became the religious leader and teacher of the world and of the ages. There were found the conditions which made him universal. These circumstances do not explain him completely; but without considering them, it is impossible to understand him. His origin and development were entirely natural and human,

— one with those processes by which Evolution in world-making, concentrates its forces “in suns as well as in minor worlds, and from them distributes its power over vast areas of time and space!”

### III.

When the great man has been produced he himself becomes a factor in the development of the race. The world's inventors and discoverers help on its material progress. It was an epoch in the history of the race, when one day, in the primitive forest, a savage found out that rubbing two sticks together, or striking two flints, would produce fire. The age of steam was in that first spark. The Newtons and Darwins have enlarged our knowledge. The Homers and Shakespeares have added worlds of beauty to the world of invention and the world of knowledge. But higher than those who have struck the harp, higher than those who have searched for truth and found it, higher even than those who have died for truth, stand those “who were ready to die for men, if only thereby they might improve their lot.”

Jesus was not an inventor, philosopher, or scientist. His sphere is the moral and spiritual. Great as were man's other needs, he saw

that the needs of the soul were greater. To the soul his life was devoted; and his death crowned and made glorious his life. He made an epoch in the religious history of the race. The mission of Jesus must be re-read in the light of what evolution shows us concerning the origin and nature of man. If we are not fallen, and under the wrath of God, then Jesus as an atoning sacrifice is not needed. If we have come up from the animal, with a brute inheritance that wars with our higher aspirations and aims, then we need some one to help us in the moral struggle thus precipitated. We want to get rid of the lingering vestiges of serpent and tiger, and ape and hyena. We want to bring into the ascendant those higher qualities whose feeble germs date also back to the remote past. How can this be done? What methods shall we use? What motives will prompt us? What leadership will go before us to show us the way? What inspiration or incentive shall we have?

Here the mission of Jesus becomes apparent. At a certain point in history the religious genius of the Jewish nation produced its highest example and illustration. Jesus was born at that point where he could best develop; at the time when his influence could be most

widely diffused. Wherever his teachings spread, men said, "That is the word we need." Wherever the story of his life was told, they said, "That is the light to guide us!" And his truth is still the word we need; his life is still the light that shines upon our perplexed and uncertain pathways.

## X.

THE GOAL OF EVOLUTION.



“Howbeit, that is not first which is spiritual, but that which is natural ; then that which is spiritual. The first man is of the earth, earthy ; the second man is of heaven. As is the earthy, such are they also that are earthy ; and as is the heavenly, such are they also that are heavenly. And as we have borne the image of the earthy, we shall also bear the image of the heavenly.”

1 COR. XV. 46-49.

## X.

### *THE GOAL OF EVOLUTION.*

IF there are in the regions above us beings superior to man, crowned with light and robed in immortality, what a marvelous picture must have been spread out before their eyes in the evolution of this planet from primitive stardust, and the unfolding of its varied life. Before them an age-long procession has passed. Slowly, but surely, the earth has rolled its compact volume out of the original nebulae, instead of being created at once, in its present shape, by an omnipotent edict. They have seen the vegetation that robes the earth with grasses, trees and flowers, spring forth from the fewest and simplest germs. They have beheld one form of animal life after another, beginning with the mere jelly-speck of the amoeba, rising upon the earth, then sink into a subordinate position or become wholly extinct, while another and a higher type has taken its place, only to be itself superseded. Thus have these bright celestial beings witnessed the rise and fall of the organic kingdoms until Man appears. He now holds

the throne and wields the scepter. All things are under his feet. His dominion to-day is undisputed.

But what is man? What is to be his fate? Is he to lose his crown and pass away? Is he to be but a fleeting spectacle in this unending pageant? Is he to go down in nothingness and night, leaving but a few fossil vestiges behind, and disappearing completely from the universe? Tennyson sings:

“A monstrous eft was of old the Lord and Master of  
earth;

For him did his high sun flame and his river billowing ran,  
And he felt himself in his force to be nature's crowning  
race.

. . . . .

Many a million of ages have gone to the making of man:  
He now is first, but is he the last? Is he not too base?”

Is man the crowning race? Is he to hold his position? Is he to be perpetuated, not only as a race upon this earth, but also as an individual beyond this earth? Is this product, Man, the end of the series, the goal of the ages? If so, what shall be his own future development? Is he finished, or is he but fairly begun? Let Tennyson answer his own question:

“ Where is one that, born of woman, altogether can  
escape  
From the lower world within him, moods of tiger or of  
ape ?  
Man as yet is being made, and ere the crowning age of  
ages,  
Shall not aeon after aeon pass and touch him into shape ?

“ All about him shadow still, but while the races flower  
and fade,  
Prophet-eyes may catch a glory slowly gaining on the  
shade,  
Till the people all are one, and all their voices blend in  
choric  
Hallelujah to the Maker. ‘ It is finished, man is made ! ’ ”

In the processes of Evolution, there are signs of purpose. I do not mean by this anything like the minute and mechanical design argument of Paley, that found in every nerve and muscle and organ a special and beautiful piece of divine adaptation of means to end ; but I mean something profounder and vaster. I am not now inquiring what there may be behind all this apparent movement towards an end, whether a personal or an impersonal power. I am only saying that, judged as we must judge of everything, it looks as if there were some object in view from the beginning, some goal to be reached, worthy the ages of Nature’s toil and travail. From indications that I shall

point out, it seems as if this object were the production and perfection of man. "According to Darwinism," says John Fiske, "the creation of man is still the goal towards which Nature tended from the beginning. Not the production of any higher creature, but the perfection of humanity is to be the glorious consummation of Nature's long and tedious work."

## I.

### COMPLETION OF THE ANIMAL FORM.

That no higher animal form than the human body will ever appear upon earth is highly probable, — to all intents and purposes, certain. The indications are that organic evolution has reached its limit in the human form. The body will have no new organs. There will be no new species, no higher race.

What is the reason that scientific men believe that the "highest possibilities open to flesh and bone and nerve and muscle have now been realized;" that the development of the animal has been arrested; that the body has reached its finality? It is this: The necessity no longer exists for further physical development in the shape of new limbs and organs. In the dim centuries that have gone, when the envi-

ronment of animal forms was changed, the organism had to change at last. There were new conditions to meet. When the fish forms of the sea floundered ashore in the mud, they had to learn to breathe air or perish ; so Nature gradually changed the water-breathing apparatus into lungs. And this is but an instance of what went on for countless ages in the animal world. The body was constantly adapted to its surroundings ; and where there was need new organs were developed. But when we reach the human period, this necessity has passed away.

The reason must be obvious. With man, the age of invention begins. No farther stage of development is necessary to secure greater efficiency in the human frame, to better adapt its members to their work. Neither are we to look for new parts. We do not need them. We do not wait for any further development of the present hand, or for a new one. We supplement it with tools, and we realize the fable of Briareus with his hundred hands. "Tools," says Mr. Drummond, "are external hands. Levers are the extensions of the bones of the arm. Hammers are callous substitutes for the fists. Knives do the work of nails. The vice and the pincers replace the fingers. The day that the cave man split the marrow bone of a

bear by thrusting a stick into it and striking it home with a stone — that day the doom of the hand was sealed.” The eye — we do not expect it to unfold any greater power of vision, to penetrate farther into space or to examine more minutely the infinitely little. We add to the power of the eye the lenses of the telescope. We add to it, in the other direction, the microscope. So we increase, by various devices, the power of the ear. Steam, electricity, the bicycle, — all add to the swiftness of the feet. The slowest mortal on earth to-day may distance, without any additional development of old members, or added new ones, the giant of the story books, with his seven-league boots. The telephone projects the human voice into distant regions, and the printing-press multiplies its influence. And while man is still modified by his environment, he is no longer at its mercy. He changes it at his will. In the ages before man, and in the early human ages as well, wind and wave, rock and sun, were well-nigh omnipotent; now man has risen to the dominion. He has laid his hand upon the white mane of the ocean and tunneled the everlasting hills. He has captured the thunderbolts that once slew him, and made them his messengers; the winds that once beat him, and

made them his beasts of burden. Nature has been modified by man, as much as man has been modified by nature. "Evolution, after all," says one, "is a slow process. Its great labor is to work up to a point where invention shall be possible, and where by the powers of the human mind and by the mechanical realization of the energies of the universe, the results of ages of development may be anticipated. Further changes, therefore, within the body are unnecessary. Evolution has taken a new departure." With the age of invention, the old order passes away; the human organism has reached its limit!

## II.

### THE NEW DEPARTURE.

The forces of Evolution which have completed the body are now turned to the development of the human mind or spirit. The powers which we all recognize as belonging to the soul have not yet reached their boundaries; and there may be powers lying latent in the soul which we have not yet discovered.

1. This fact stands related to a question arising out of the origin that Evolution assigns to us all. If man and the lower orders are in-



volved in the same process, if soul and body came up together from the depths of the past, why should man look for a destiny different from that of "the beasts that perish"?

To be sure, we are here largely in the realm of conjecture; but so far as we can judge, the mind, as well as the body of the animal, seems to have been arrested, except within a narrow, and a very narrow range. This range is narrow, even in animals under domestication. The boundaries are soon reached. But it is not so in the case of man. The boundaries have not yet been touched or even approximated. The faithful dog may be taught to take care of the little child, go with the child to the school-room door, and protect him from danger; but the world which lies beyond that door is one which the most faithful and intelligent dog cannot enter. That world is to be conquered only by the human child.

What becomes of that little spark of animal life we do not know. It does not necessarily follow that because the mind of man was derived from it, or both from the same source, that the two are linked in destiny, that one is to be as enduring as the other. The flame of the lamp that burns for a night is derived from the little flash of the match that perishes in an

instant, as soon as it has kindled the larger light. The massive oak, — wide-spreading, century-living, — is derived from the acorn that soon perishes as an acorn. How often do we see the permanent springing from the transient! The instinct of the animal may itself be perishable, even though it give birth to immortal being. It may pass away and die, though it leave an uncrumbling monument behind.

This, too, is significant: that in the orders below us, "the psychical life is merely an appendage to the life of the body," — the one object of the animal is physical existence, material good. Whatever of mental life it may have, is all directed towards this one end. Nowhere are there signs of intellectual activity for its own sake. Of course, we are treading here upon uncertain ground. But in the case of man, in the human being, a great change has been wrought; and the life of the body becomes tributary to a higher life. The soul is central. It is no longer to be mastered by the body and made to do its bidding; it is itself master; it brings the body under subjection and uses it as its instrument. Paul illustrates this thought when he says: "Every man that striveth for the mastery is temperate in all things. Now they do it to obtain a corruptible crown, but

we an incorruptible. I, therefore, run, not as uncertainly; so fight I, not as one that beateth the air; but I keep under my body, and bring it into subjection!"

2. While Man, then, so far as we may see, is a "finality in organism," his mental and moral growth have not yet attained their full measure. There are untold possibilities in these directions that lie before him.

(1) While the body has been arrested in its development, so that we are to look for nothing new in the way of organs or limbs, we cannot say that the powers of the soul are numbered.

This is an age of curious study and investigation, and this study is centered largely on the mind. Based upon what has already been accomplished, what faith is too great for the future? All the triumphs of civilization have been triumphs of mind over matter. The railway was born in a human intellect, before the bars of iron were molded and laid; and the locomotive was a creation of the mind before it thundered on the track. The whole world of art and beauty is the creation of the soul. Has the last color been laid on the canvas? Has the sculptor struck his chisel for the last time into the marble? Have the possibilities of music ceased? Are there no more songs that

ring through the brain and demand expression? The mind has dominated the body; has nerved the coward arm to strike some redeeming blow; has swayed its scepter over disease and pestilence; has held many a feeble frame to its appointed task. Out of the new interest in mental phenomena, after all deductions shall have been made, will come, I doubt not, some new knowledge. We shall find that the human soul has capacities of which, despite the achievements of the past, but the dimmest intimations exist to-day. It is not impossible that we may yet communicate without post or telegraph, across mountain and sea. It is not improbable that we shall be able to demonstrate the ability of the soul to dispense with the body; that definite evidence of its independence and existence hereafter may take the place of that faith which enters into and grasps the things behind the veil! All this may come.

(2) Even while the body grows feeble and decays, from disease or old age, the mind is yet soaring among the stars and the heart is strengthening its affections. If this life, therefore, is all, the work of evolution is manifestly incomplete. The forces of nature, like the foolish builder in the parable, began to build and were not able to finish!

The force of this conviction has been felt by many great spirits, — not only that the mental development of humanity in general will be continued in the future upon this earth, but that each member of the race shall be brought to all of which he is capable, if not in this world, then in some other state of existence. Goethe said : “ To me the eternal existence of my soul is proved by my idea of activity. If I work incessantly to my death, nature is bound to give me another form of existence when the present one can no longer sustain my spirit.” Martineau, at nearly ninety years of age, standing near the close of a career marvelously full of attainment, exclaimed : “ How small a part of my plans have I been able to carry out ! Life, even at its fullest on earth, is a fragment.” Victor Hugo, in his old age, declares : “ For half a century I have been writing my thoughts in prose and verse. History, philosophy, drama, romance, tradition, satire, ode and song, — I have tried all. But I feel I have not said a thousandth part of what is in me. . . . When I go down to the grave, I can say, like so many others, ‘ I have finished my day’s work,’ but I cannot say, ‘ I have finished my life.’ My day’s work will begin again next morning. The tomb is not a blind alley ; it is

a thoroughfare. I close on the twilight to open with the dawn. . . . My work is only a beginning. My work is hardly above a foundation. I would be glad to see it mounting and mounting forever. The thirst for the infinite proves infinity."

"Glory of warrior, glory of orator, glory of song,  
Paid with a voice flying to be lost on an endless sea ;  
Glory of virtue to struggle, to fight, to right the wrong.  
Aye, but she aimed not at glory — no lover of glory she.  
Give her the glory of going on and still to be !  
'The wages of sin is death' ; if the wages of virtue be  
dust,  
Would she have the heart to endure for the life of the  
worm or the fly ?  
She desires no isles of the blest, no quiet seats of the  
just —  
To rest in a golden grave, or to bask in a summer sky.  
Give her the wages of going on and not to die !"

### III.

#### EVOLUTION AND HUMAN EFFORT.

To realize all that is possible for the individual and the race, man must coöperate with the forces of the universe. When man first appeared upon this planet, it is certain that he developed very much as did the animals which surrounded him. The first man did not know what he was here for, and some of his latest de-

scendants are involved in the same hopeless perplexity. He did not know or care whither he tended. He had no particular object in life. He suffered himself to be buffeted by the elements. He made little or no voluntary effort to improve himself. He did what he must. He sought, as did the wild beasts about him, for food and shelter. For these he fought with other savages and slew them, when need be, with clubs and stones. By and by the glimmering spark of reason, uncertain and wavering in the primitive brain, became stronger and fuller-orbed. With the development of this higher factor, a new element is introduced into the processes of evolution.

1. Man must now work with Nature for the development of the highest and best that is in him. We must help in the new tasks, must follow out the new direction. The old forces are still at work, but they have sunk to a subordinate position. They are still at work, but they must be used by the highest force of all, the intellect and will of man. We must search out and apply the laws that are written in the universe.

“Man’s own effort,” it has been well said, “is the chief factor in his own evolution.” “God needs strong men to help him,” said

Luther. "He could not make Antonio Stradavari's violins without Antonio." Man's task now is to help Nature, to coöperate with the wonderful forces that have wrought so marvelously in the past, that he may develop his own spirit, fortify his own moral nature, cultivate his own affections; and at the same time help to roll the world onward, — away from the old field of struggle where only the strongest were victors, away from the survivals of that old warfare in the human period, the hundred battle fields of to-day, on which the poor, the weak, and the helpless are still beaten down in the mad rush for wealth and position. And as we learn to coöperate with nature in producing a higher humanity, so we may learn to coöperate more and more with humanity, with our fellow-men, in producing a higher society, a society in which the law of battle will be replaced by the law of love; a society in which the weak will be patiently helped to grow strong, and not ruthlessly slaughtered because they are defenseless; a society in which the predatory instincts that linger with us, from ancestors which swam the seas, which roamed the forests for what they could devour, shall be subdued; and tooth of shark and claw of tiger be replaced by heart of love and hand of help.



2. That which, for want of a better name, theologians have called Original Sin, that which they thought was transmitted from Adam, antedates the days of Eden; it is the survival in man of certain brutish instincts that came from very lowly ancestors; instincts that were engendered in the days of —

“dragons of the prime,  
Which tear each other in their slime.”

They came out of all those long ages of struggle for existence in which the means of subsistence went to the sharpest tooth and the longest claw. There is still an element within us, at war with our own growing sympathies, at war with the interests of our neighbors; but it did not come from Adam, nor is it, as others think, the work of the devil. It is an inheritance from the beasts that fought and slew each other in the battle for prey and place. But there is improvement. Farther and farther from the primitive state is man advancing; his pathway is growing brighter and brighter; the herald beams of morning predict the perfect day. The mind shall triumph. Righteousness shall win the victory. The scepter of the soul shall rule the bequest of the animal!

3. In order to help him throw off the brute

inheritance, man needs incentive and inspiration. He does not need restoration to a state from which he has never fallen, but impulse and incentive to a state which is yet to be attained.

The message of Christianity is that there is a possible deliverance from every weight that clogs, from every instinct that hinders, from every trait of serpent or beast, into the full light and liberty and love of sons of God. Not by any vicarious sacrifice, not by any propitiation of divine wrath; but by the force of his example, the inspiration of his personality, the purity of his teaching, does Jesus save. By these elements of his life and character, he helps us throw off the animal and develop the spiritual. This is salvation. The higher qualities must triumph. The animal and spiritual man of Paul still struggle for the mastery; but the animal is doomed. The meek, and not the violent, shall inherit the earth!

I have looked again and again at that picture by Gabriel Max, the Ancestors of Man. There is a strange and mighty fascination about it. Half brute and half human they seem, — these ancestors. With difficulty the father has struggled to his feet, and stands supporting himself against a fallen tree. His eyes are dull and heavy, the mouth gross and sensual, the face

expressionless. But as the savage mother sits at his feet, her first-born in her arms, a look of puzzled wonder is in her eyes. She cannot make it all out. Why have they been called from the brute to something higher? Why are new thoughts awakening in their troubled brains? Why are new affections beginning to stir in their hearts? And the little creature that lies in her arms — what does it all mean? Poor, savage mother! the hopeless questionings in thine eyes, the ages must answer. Thou shalt die without the sight on earth; and thou and thy brutish mate and thy little one shall have mingled again with the earth before the grand consummation. But be sure there is an outcome. Be sure the race which takes its rise with thee shall come to great estate. And some far day it may be, and from some ground of higher vantage, the spirit that now looks anxious and uncertain from thy troubled eyes will see with clearer vision and be satisfied. And we who look back to-day over the long pathway of the ages, the ages up which man has toiled from that primitive forest and those rude ancestors, what matter that we bear the image of the earthy; that we inherit traces of that far-off time? What matter where we began, or how, so long as we have advanced and are ad-

vancing? so long as a glorious destiny awaits us? It is all the divine order and process. That is not first which is spiritual; but that which is natural. First must come the man who is of the earth, earthy; then shall come the man that is of heaven. First must come the lower, the savage, the physical; then comes that which is higher and more godlike. The succession is that which is divinely ordained. But the glory of it is, that we do not stop with the animal; we do not stop with that which is earthy. We have borne the image of the earthy, indeed; but we shall also bear the image of the heavenly, of that which is perfect, spiritual, divine. If the image of brute and savage have been stamped upon us, they shall be lost at last in the image of God!



## XI.

THE GOD OF EVOLUTION.

“ I have gone the whole round of creation. I spoke as I  
saw.  
I report as a man may of God's work — all's love, yet all's  
law.  
Now I lay down the judgeship He lent me. Each faculty  
tasked  
To perceive him, has gained an abyss where a dew-drop  
was asked.”

BROWNING.

## XI.

### *THE GOD OF EVOLUTION.*

“THE present time,” says Carlyle, “youngest born of eternity, child and heir of all the past times with their good and evil, and parent of all the future, is ever a new era to the thinking man, and comes with new questions and significance, however commonplace it looks. To know it, and what it bids us do, is ever the sum of knowledge to all of us. . . . There must be a new world, if there is to be a world at all.” We may take these words, general as they are, and make a specific application to religion. We are entering a new world of religious thought, have entered it. To know it, and what it bids us do, is ever the sum of knowledge for all of us. This new world in religion is necessary if there is to be a world of religion at all. The investigators of Nature have been chiefly instrumental in constructing this world. It is larger and more orderly than the old one; but there exists among many people a lurking fear, if not a pronounced opinion, that something vital,



something indispensable, has been left out. They ask with trembling hearts and bated breath, "Where is thy God?"

Let us be perfectly candid. Let us not blind ourselves to facts. Let us not refuse to look with open eyes at the universe under the new light that has been thrown upon it. It will be time enough to give up God when we must. Meanwhile, how stands the case? The planet on which we live rolled, after incalculable ages, out of the original fire-mist. The plants and flowers that wreath its brow have developed from the fewest and simplest germs, into equatorial pomp and splendor. From the ooze of the ocean, one form of life after another, came the animal kingdoms. From stage to stage, along the upward ascent of being, has crept the ancestral line of man. The final product of this ascending energy, he stands at the summit of the mountain up which the slow and painful ages have toiled. These are the facts that are almost universally accepted among scholars and thinkers to-day.

There are three ways of considering these facts. The agnostic looks upon this sublime spectacle and says, "I can make nothing out of it. I do not know how it has been produced and kept in progress." The materialist says,

"The forces in matter were themselves sufficient. There is nothing more!" Now the religious man, if he is wise, will turn to those who have discovered these facts, and say, "I accept the situation. I cannot gainsay your evidence. I am convinced by your arguments. I believe in Evolution as thoroughly as you. I go the whole length of the doctrine and include body and soul in the process. But I cannot stop here. This is not the whole story. I demand an explanation, and an explanation that shall be adequate to the problem, and worthy of the magnificent scheme you have so amply demonstrated."

Indeed, we are very far from having to give up God. Strauss says, "The world did not proceed from reason, but it has reason for its goal." And Bruce replies: "How much more credible the counter-thesis, that just because reason is the goal of the world-process, therefore it proceeded from reason,— mind, thought, spirit, the fountain of all that is!" The only adequate explanation is that found in the old Scripture, "One God and Father of all, who is over all, and through all, and in all!" By Him were all things made that are made; and Evolution is the method of the making! We have not lost God; we are just beginning to find Him. He is greater than we knew. He is nearer than we

realized. He is better and wiser than we dreamed. We have not lost God; we have only lost an old idea of His way of doing things. I have already spoken of the goal of Evolution. I want to speak now of the God of Evolution, who is in the process, guiding it to the glorious culmination.

### I.

The God of Evolution is inside of Nature and not outside of it. And when we consider that man himself is a part of Nature, and the best part of it, we must find God also in him, pre-eminently in him.

1. The view that has hitherto prevailed represents God as a great master mechanic, far away above us and beyond our reach, who once upon a time, long ago, and once for all, worked, created matter, endowed it with necessary properties and powers, "constructed at once out of hand this wonderful cosmos, with its wheels within wheels, put springs into it, set it a-going and then rested."

So far as having anything further to do with it is concerned, except to interfere now and then with its working, He might have been sleeping or dead since the first Sabbath. God is external to Nature and man and only comes in contact

with them when he wishes to work a miracle or answer a prayer. The imagery under which God is so often represented comes to us from a pre-scientific age, and is drawn from the human workman and the fabric he constructed. The workman was outside of the table or couch or implement which he shaped; outside of the stone which he fashioned for the temple. So God was conceived as being outside of His universe, something or someone as much apart from it as the carpenter from his block of wood, or the mason from his block of granite. Other imagery — especially that relating to the administration of the universe — has come from the times in which the king or emperor was absolute and supreme. Hence, the God of our theology is a royal personage, a magnified earthly monarch upon his throne, — a throne in the distant heavens, — surrounded by his attendants and courtiers in the shape of archangels; indeed, it was through these that he generally communicated with that outlying territory, the earth, and rarely deigned to visit its inhabitants in person. Caesar had business in Rome; his emissaries must look after the provinces. Even now many Christians feel that they cannot approach God directly, cannot speak to Him face to face, but must come to Him through His Son, or

Mary, or some of the saints. As for God Himself, He sits upon His solemn throne, wrapped in robes of seclusion, dwelling in unapproachable grandeur. There is a chasm, wide and deep, between Him and His universe, between Him and man !

On the other hand, the scientific theory of resident forces compels us to find intelligence, purpose, and righteousness in some power within the universe itself and not apart from the universe ; we must find " God resident in nature, at all times and in all places, directing every phenomenon, — a God in whom, in the most literal sense, not only we, but all things have their being, in whom all things exist, and without whom there would be and could be nothing."

Perhaps the best illustration we can find is that of the relationship between body and soul in man. Within the body, controlling and directing all its movements and forces, is the mind or spirit. Take this away, and the body lies stark and dead. There is no longer activity. No thought leaps forth from the brain, the tongue is silent, the right hand has lost its cunning. So within nature, controlling and directing all its movements and energies, is God. All outward phenomena are but the

manifestations of His thought, all force is but the exercise of His will, all laws are but the regular modes of His activity. As Martineau has very finely said: "The laws of nature are the habits of God." And these are uniform and unchangeable, because He Himself is immutable, — the One with whom there is no variableness, neither "shadow of turning." Thus the law of gravitation resolves into the divine method of sustaining the universe, holding its planets in place, keeping them within their orbits, — as the laws of cohesion and chemical affinity are the pressure of his hand-clasp upon the materials of which the planets themselves are composed. And thus the processes of evolution become the divine method of originating and developing the universe itself. Take Him away and the universe crumbles. The sun no longer shines. The stars are dead. The earth turns to ice. The planets dash from their orbits in confusion. And man himself perishes amid the "wreck of matter and the crush of worlds!" It is only in Him that we live and move and have our being. One cannot hold on to the old idea of God, as outside of His universe; he is compelled to find Him inside of nature, as he finds the human soul within the human body. To

one who takes this view, as John Fiske says: "No part of the universe is Godless. In the swaying to and fro of the molecules and the ceaseless pulsations of ether, in the secular shifting of planetary orbits, in the busy work of frost and raindrop, in the mysterious sprouting of seed, in the everlasting tale of death and life renewed, in the dawning of the babe's intelligence, in the varied deeds of men from age to age, he finds that which awakens the soul to reverential awe; and each act of scientific explanation but reveals an opening through which shines the glory of the Eternal Majesty."

## II.

Let us now try to show what specific changes in theological thought are made inevitable by the idea of God as perpetually present and operative in the world.

1. First of all, science has given us a real universe, that is, a system of things pervaded by unity and order. How does this idea affect our idea of the nature of God?

To the principles of evolution, we must add the discovery of the conservation and correlation of forces. The "total energy of the universe is constant, no energy being created or

destroyed in any of the processes of nature, every gain or loss in one form of energy corresponding precisely to the loss or gain in some other force or forces." Heat, light, electricity, — all manifestations of one force which is never increased or diminished. We must, therefore, find God in connection with this one eternal and unvarying energy. It was long before man discovered this truth. For untold centuries, nature has seemed full of division and strife. The warring nature-deities had their birth in the supposed antagonism of natural forces. Ahriman and his angels, in the religion of Zoroaster, fight against Ormuzd, the good, and his beneficent hosts. The devil and his angels, in Christian theology, repeat the primitive conception of a divided and battle-convulsed universe. God, the good, — so multitudes of Christians still believe, — has a great antagonist. Under the scepter of this antagonist are multitudes of minor spirits of wickedness. These, together with their leader, fight against God and all that is good, they tempt and harass the souls of men, they have power over nature itself for harm, and use its elements to work mischief to men and defeat the plans of God. How widely at the present hour is all this accepted! But what if there be but one



power in nature, and not two or ten thousand? And what if this one power be the Infinite and Eternal God? It is precisely to this point that Science is driving us. In this view there is no room for a devil or spirits of evil. Science has cast them out. In this view there is no room for a Trinity. Science sends it back to the gossamer-spinning ages of speculation which wove it into theology. In this view there is no room for natural evil. The same power that produces the dew-drop whirls in the tempest; that paints the violet throbs in the earthquake. The sterner and more violent operations are necessary parts of the same system. The temporary disturbance — as it seems to us — means the perpetual equilibrium; the incidental disaster — as it seems to us — means the universal blessing. If we take the standpoint which science furnishes, we shall see that the universe is good and not evil.

“ All nature is but art unknown to thee ;  
All chance, direction which thou canst not see ;  
All discord, harmony not understood ;  
All partial evil, universal good.”

2. In the next place, science has taught us the universality of law, the continuity of the processes of nature, and so our idea of the

methods of God must be made to harmonize with these conditions.

The distinction between natural and supernatural is utterly and forever abolished. There is but one realm. Call it what you will. There are not two separate provinces in the universe, under different systems of administration. Once it was thought that when God wanted anything done, He did it by an act of special creation; and when God wanted anything done differently, he accomplished it by an act of special interference. Now evolution requires us to believe that God, this resident force in nature, works continuously and by fixed laws, not by special impulses. Lecky speaks of the scientific study of the universe as "one continued revelation of the reign of law." So long as God was conceived of as apart from His universe, everything that took place according to the forces He had originally set going in the universe, was natural, everything that He did by his own direct agency was supernatural. Fill the universe with God and this distinction is no longer possible. The whole subject of the miraculous must pass under revision. Mysteries there may be; but violation of the laws of nature by Him who impressed them upon the universe is out of the question. Once such violations were

supposed to be proofs of the existence of God. To-day it is felt that the order which everywhere prevails, is an infinitely better proof. John Burroughs says, "To find the divine and helpful in the mean and familiar, to find religion without the aid of supernatural machinery, to see the spiritual, the eternal life in and through the life that now is,—in short, to see the rude, prosy earth as a star in the heavens, like the rest, is, indeed, the lesson of all the hardest to learn; but we must learn it sooner or later. There surely comes a time when the mind perceives that this world is the work of God also and not of devils; and that in the order of nature, we may behold the ways of the Eternal." A clergyman once related to Dr. Whately, how himself and others were saved from a vessel burning at sea. "Being so unworthy, he wondered that the Almighty should have so favored him." "Wonderful," replied Whately, "but I have had a still more wonderful experience. Not three months ago, I sailed in a packet from Holyoke to Kingston, and by God's mercy, the vessel never caught fire at all, and every soul on board landed in safety." Lowell in his Cathedral says:

“ If sometimes I must hear good men debate  
Of other witness of thyself than thou,

My soul shall not be taken in their snare,  
To change her inward surety for their doubt  
Muffled from sight in formal robes of proof ;  
While she can only feel herself through thee,  
I fear not thy withdrawal ; more I fear,  
Seeing, to know thee not, hoodwinked with dreams  
Of signs and wonders, while, unnoticed, thou  
Art walking in thy garden still."

3. In the third place, science has abolished the old form of the argument from design, and obliged all who believe in God to re-read His plan and purpose.

The old form of the argument which many of us learned in school when applied to the human body, for example, dwelt upon the benevolent purpose of every organ and muscle and fiber of the anatomy. But evolution has shown us that there are in the animal frame of man many useless relics that have been left over from previous forms, many relics also that, so far from serving a useful or good purpose, are a constant menace and source of danger. The old design argument has gone to pieces. No thoughtful mind adopts it to-day. But its destruction does not leave "this goodly frame of things" without purpose. There is a larger and grander teleology. There is an aim and plan of wider sweep and more majestic conception. The scientific man simply notes its processes and methods. He watches

and studies the marvelous procession. But the religious man, accepting the facts of science, sees behind these methods and processes, behind the infinite succession of changes, a life and thought divine. Forms and species, we now see, are not ends in themselves, as the old theory made them; they are all related to a vast scheme which stretches from everlasting to everlasting.

A temple is to be builded. The special creationist would say, "Behold, the wisdom of the architect in all these broken bits of stone that lie scattered over the ground; in all these splotches of plaster on the floor; in all that rough scaffolding outside and within upon which the workmen stand! How wise and good the architect who would design all these things, who should have them in his plan from the beginning." The evolutionist would say: "The finished temple and not the incidental marks left by the builders is the evidence of the architect's intelligence and plan." The production of man and the development of his higher nature is the goal toward which all the forces of evolution have tended in the past, toward which they are working to-day. The processes are not to be judged in themselves or their incidental results; they are to be read

in the light that shall flash from the final achievement. Nature centers in man, and man is the interpreter of nature. "Not an act of nature," says one, "from the winds that leaped ages ago across the Himalayan heights to the trickle of lime-drops building stalagmites in a sunless cavern, but pointed toward the evolution of moral character in beings not yet evolved. Man is the fruit, but not the ripe fruit of evolution; and his moral character is the product of all the conjoined forces that work in atoms or in the universe. He is already the child of cosmical environments, but it does not yet appear what he shall be." No, it does not yet appear; but we know the direction, we are sure of the goal.

" I, too, rest in faith  
That man's perfection is the crowning flower,  
Towards which the urgent sap in life's great tree  
Is pressing — seen in puny blossoms now,  
But in the world's great morrows to expand  
With broadest petal and with deepest glow."

Nature centers in man, and man is the best interpreter of Nature and of God.

There are evidences in the world and in ourselves of thought, affection, goodness and purpose. The things that make us what we are — the qualities of brain and heart and will —

have come from some larger and grander source. While writing these words in my study, I turned and looked out of the east window. I did not see the sun ; but on the roofs of houses, gilding the barren branches of the trees along the avenue, turning the telegraph wires into threads of gold, and gleaming upon the pools of muddy water in the streets, —I beheld many a ray of mellow light ; and I knew from these scattered sunbeams that somewhere, in the heavens, rolled in its majesty and splendor a great world of glory. The sunbeam proved the sun. And so, when we see in the hearts of men the rays of thought and love and purpose, we know they come from some larger life, intelligence and goodness.

4. And thus we reach the final point. We saw in the beginning that God was not outside of nature and apart from it ; but that He was inside of nature, and that man was a part of nature. So that God dwells also in man.

The theory of special creation put God outside of man as well as outside of all the rest of nature, but allowed him the divine image ; in the fall that image was lost, and the separation between God and man became more complete than ever. The doom of separation, final and forever, was pronounced. God might save, but

by imputing a righteousness that man does not possess, or by creating a new nature. This was the old theory. But the new idea of God makes him a perpetual resident in humanity, without break or alienation; and so long as man exists, here or hereafter, will God be in him. And this divine power will not be banished by the fact of sin, but will remain to triumph over sin.

In a recent novel entitled the *Zeit-Geist*, one of the characters, Bartholomew Toyner, thus voices his faith: "And God does not change because we die, and wherever we go He is with us and gives us energy to do just what we choose to do. It's hell before we die, when we live that way; and it's hell after for ages and ages and worlds and worlds perhaps, just until the hell-fire of sin has burned the wrong way of choosing out of us. But remember God never leaves us whatever we do. There is nothing we feel that He doesn't feel with us. We must all come in the end to being like Himself, and there's always open the short, simple way of choosing His help to do right, instead of the long, long way through hell. But I tell you, Ann, whether you're good or whether you're wicked, God is in you and you are in Him. If He left you, you



would be neither good nor wicked ; you would stop being ; but He loves you in a bigger, closer way than you can think of loving anybody, and if you choose to go round the longest way you can, through the hell-fire of sin on earth and all the other worlds, He will suffer it all with you, and bring you in the end to be like Himself !”

### III.

To be like Himself ! There ought to be — there will be when we see clearly — a practical power and inspiration in the thought thus presented.

1. Man, the supreme work of God,—the object of the processes that went on through these uncalendared ages,— what call for gratitude, love and reverence ! If the chief end of God was man, let the chief end of man be God.

If the Great Power from which we have come is to be interpreted in the light of its highest product, if this Power is manlike, then let man strive to become Godlike. If there are human elements in the life from which we came, then let us try to become divine. This is our deepest duty and our highest privilege. Who can think of this God, back of all things and in all things, glittering in the sun, yet

throbbing in the human pulse; guiding the tottering footsteps of the dying through the valley of the shadow, yet waking to new consciousness in every cradle; who can think of this God without feeling, I ought to love and reverence and worship? It is well to build our material structures; to lay our railroads and erect our business blocks and private mansions; it is well to extend our commerce and foster our trade; but is this all? If so, we are poor and shriveled indeed. If so, we are stripped and despoiled in the sight of God. If we build in the material alone, we shall leave behind us but a crumbling pile of dust, — for to this end must the most substantial structure of granite or marble come at last. Greater in the sight of heaven will be the poorest failure on earth, if he have succeeded in building the temple of God in his soul; the kingdom of love and justice and purity! These are the things that shall last. For these the ages have striven and creation has groaned and travailed! Dr. Collyer recalls an interesting passage between Ralph Waldo Emerson and Oliver Wendell Holmes. The latter said that many of the hymns in use were mere pieces of cabinet work. Then his voice deepened and his eyes shone, as they did in his noblest moments, and he said, "One

hymn I think supreme." Emerson threw back his head and waited, while Dr. Holmes repeated :

"Thou hidden love of God, whose height,  
Whose depth, unfathomed, no man knows,  
I see from far Thy beauteous light ;  
Inly I sigh for Thy repose.  
My heart is pained, nor can it be  
At rest till it find rest in Thee."

Emerson responded : "I know, I know, that is the supreme hymn. 'I shall be satisfied when I awake in Thy likeness.'"

2. And that time shall come. Man is still unfinished, but for each one awaits the unfolding of all that is wrapped up within his soul. The power that has begun is pledged to finish. Not in vain have all things worked together for this end.

That time shall come. There will be fairer days for the earth, and there will be fairer days for those who have wrought upon the earth, so often in tears and agony, so often without compensation or recognition ! Exclaims one : "There is hope that we shall yet and somewhere be the men and women we have seen in our prophetic dreams, and shall walk together in a companionship worthy, enduring and true. In this hope, then, let us live. O soul of man,

deem no conquest too vast, no vision too bright; death shall not snatch it away!"

Take, then, thy God, O troubled soul! Take Him back from the searchings of science, enlarged and glorified. Think of Him as closer than ever; think of Him as within thee to guide and inspire. Still shall His presence make brighter the opening day and hallow thy midnight petition. Still may we cry with the Psalmist: "God is our refuge and strength, a very present help in time of trouble!"

"Speak to Him, thou, for he heareth,  
And spirit with spirit may meet;  
Closer is He than breathing,  
And nearer than hands and feet."



## **XII.**

**EVOLUTION AND THE ETERNAL  
GOODNESS.**

“The creation itself also shall be delivered from the bondage of corruption into the liberty of the glory of the children of God. For we know that the whole creation groaneth and travaileth in pain together until now.”

ROMANS viii. 21, 22.

## XII.

### *EVOLUTION AND THE ETERNAL GOODNESS.*

THAT the investigations of Modern Science have marvelously changed our conceptions of the universe cannot be doubted. They have infinitely extended that universe in time and space. They have shown us the wonderful processes by which all things have come to be what we find them to-day; by which we ourselves have come to be what we are to-day. They have brought all things under the dominion of law. The reign of whim and caprice is ended. The most erratic comet has been yoked to the universal order. The most extraordinary phenomena have been traced to some general principle. Vastness, wonder and order characterize the universe to-day. But is this all? Must we stop here? Can we rest content with such a scheme and system of things? Is this revelation of science, — the immensity, the marvelous character of the universe, its ceaseless procession of phenomena, the laws



that underlie them, — is this sufficient for our deepest needs? Perchance for the intellect this will suffice; perchance for the imagination. But this is not all that there is of man. He has conscience; he has heart. Their needs must be met. I affirm, as one who accepts all the facts that investigators have brought out, and all the legitimate deductions from those facts, that this revelation of science, taken at its face value, is not sufficient for the deepest needs of the human soul. As Mr. Chadwick suggests: "An infinitely powerful and intelligent and loveless God, — could we imagine anything more horrible? Show us the Father and it sufficeth us. Show us the Eternal Goodness, and we can bear our private griefs and losses, however dreadful they may be, and the great world-spectacle of misery and pain will not avail to make us wholly sad."

But can it be shown, — the Eternal Goodness? Is there, at the center of all things, a heart of compassion that beats in sympathy with all the needs of struggling and aspiring humanity? Is it not true that the new science robs the world of Divine guidance and leaves us orphans, bereaved of Him who, "like as a father pitieth his children"? If so, might we not well exclaim with Holmes, "Is this the

whole sad story of creation?" Then, let us, with Holmes, demand:

"Give back our faith, ye mystery-solving lynxes,  
Robe us once more in heaven-aspiring creeds;  
Happier was dreaming Egypt with her sphinxes;  
The stony convent with its cross and beads."

In the recoil from superstition, and the revolt against darkness, has it come to this,—that our discoveries have made hope and faith impossible; faith in an Infinite Love and hope in a deathless life?

## I.

### THE STRUGGLE FOR LIFE.

First of all, let us face the facts that are comprehended in the theory of Evolution. Let us know the worst. We shall make nothing by blinding ourselves. We want no false consolation. We want no comfort that is not based in reality.

1. Every one is familiar with the part played by Natural Selection, as it is called, in the process of Evolution.

More organisms are born upon this planet than survive. So, away back in the animal kingdom, began the old struggle that repeats itself in human history,—the struggle for something to eat and for standing-room upon

the earth. In the struggle for existence, which will win food and place? Which will get the victory? Which will survive? "In that struggle," says Mr. Edward Clodd, "the race is to the swift and the battle to the strong: the weaker, be it in brain or body, going to the wall; the vast majority never attaining maturity, or, if they do arrive, reaching it only to be stoned or slain. . . . The victory is never doubtful; it is assured to the plant or animal that has some advantage, however slight, which its opponent lacks. . . . The birds which are strongest on the wing reach the land whither they migrate, while the weaker perish by the way. The lions of sharper sight and more supple spring, the wolves of keener scent, secure their prey, while the feebler members starve. It is with man, as with the organisms below him,—the quickest in intellect and those with greater power of endurance, distance the weak or the stupid, who fall behind and finally step out of the ranks altogether." This is natural selection. The organism which possesses some advantage over others, however the advantage may have been secured, though it be but a sharper tooth or a longer claw, has something which assures it food and place that others cannot obtain. This is natural selec-

tion. Of such an organism, we say that nature selects it as fittest to survive. It is best adapted to its surroundings. Now, how difficult it is for us to believe that, over these awful struggles, stretching through uncounted ages, reddening rocks and seas with blood, covering the unpitied earth with bones that bleached in the remorseless sun, — how difficult to believe that over that unceasing warfare presided a spirit of Infinite Love.

2. Then, again, the Environment to which the organism was becoming adjusted often added terrors of its own to the struggle.

The wrath of Nature was added to the wrath of savage beasts and savage men. The earth shook with convulsions, the hungry waves o'erleaped the boundaries of the sea, the skies palpitated with thunders and were livid with destructive lightnings; resistless storms swept through the forests and hurled the trees like handfuls of arrows to the right hand and to the left. What havoc these awful elements wrought! What death they dealt! What devastation they spread abroad! And are all these forces, resistlessly violent or destructive, manifestations of goodness and compassion? Ah, there are other things in Nature than dew-drops and roses and rainbows! Whence are

these other things, and what do they show? Let me read you this extract from a letter to the editor of a religious paper: "I wonder what kind of a lesson you would give on this picture of everyday life, if brought before your mind, as though it had entered your own household. Suppose your own children were left fatherless, and the widow, in her struggle through poverty, raised her children to manhood and womanhood, to be honest, upright, frugal, and gave them a common school education. . . . The children, to better themselves, went West, took land, must stay to claim it. Made enough to stay through two winters. Now crops have failed and winter is on. Can you or I blame them if they do get discouraged, as far as this world's goods are concerned? They have hitherto been cheerful; what about it now? Picture all this to yourself, and try to write something to inspire them, to give them hope!" The gist of the story is, Nature has been unkind. There has been drouth or frost or mildew. These are other and different facts from June mornings and autumn fruits. Is there love in the forces that destroyed the crops; love in thunderbolt and earthquake? Is it not the veriest delirium or infatuation from which such a statement could issue? Was it not the dis-

tempered fancy of a Hebrew poet that could think of God as riding upon the wings of the tempest, or as answering Job out of the whirlwind?

3. Evolution has still further taught us that the universe is under law; that all its changes take place according to certain laws, which are fixed and unvarying in their operation.

We have, therefore, to face the fact that there is no interference from without to save the life of the weak beast or weaker man in the struggle for existence or the conflict with the elements. There is no miraculous intervention for which any worthy evidence is offered. No arm is extended from the heavens to snatch a victim from the jaws of the wild beast or the fang of the serpent. No prayer has ever turned aside the thunderbolt, or stopped the devastating flood, or checked the cyclone in its fury. The blight was not arrested on the Dakota fields. And even if we could be sure that such things had been done, it would simply destroy our conception of law, and leave favoritism and caprice seated upon the throne. A rotten ship will sink and bury saint and sinner in the common sepulcher of ocean. The train speeding on its way will hurl through an unsafe bridge or over a defective rail the chief of sin-

ners and the prophet of God. Over all catastrophes and disasters, over the field of battle, the scaffold of the patriot, and the flames of the martyr, the same heavens bend with age-long serenity; no avenging angel cleaves the blue expanse to smite the guilty, no pitying angel floats downward to rescue the innocent. All this has Science shown us. All this is involved in evolution. And can we say, in the face of it all, that goodness yet dwells in the universe? All this, and yet we prate of infinite compassion and undying love? How is it possible for us longer to say, "Our Father"?

## II.

### THE MEANING OF THE STRUGGLE.

These are facts. They lie upon the surface; but this is not the whole story. Many stop here. Mr. Ingersoll stops here. The mother of the children on the barren Dakota farm stops here. Let us look a little farther into this fact of natural selection, the great struggle for existence. Let us take another step.

If all this outward strife and strain shall be found related to some farther and grander aim and end, it may be possible to justify the age-long warfare in the light of the event. Results

often vindicate processes. The harvest justifies the plow and harrow. Liberty and union justified the battles of the Civil War. So, in this struggle for existence. "It involves," says Drummond, "that every living thing in nature shall live its best; that every resource shall be called out to the utmost; that every faculty shall be kept in the most perfect order, and work up to its fullest strength. So far from being a drag on life, it is the very thing which not only makes life go on at all, but in the very act perfects it. The result may sometimes involve the dethroning of a species or its entire extinction; it may lead, in the case of others, to degeneration; but in the end, it must lead to the perfecting of organisms upon the whole, and the steady advance of the final type." To be sure, it is possible to conceive that man might have started differently; that he might have been made full-grown and perfect; that he might have been constituted without vulgar and commonplace necessities; that he might have been made without the appetites that dominate him, without the hunger that spurs him, without the constant urging to work. All this is possible to human thought; but then it would involve another sort of universe altogether, while the question we are considering is, "Is this



universe a good one?" Is it good, not in its methods and processes considered in themselves; but is it good, considering the grand outcome of these methods and processes? the result towards which they are moving, and to which they stand related? This is the great question. Is there an object sufficiently worthy? In what we had to say upon the "Goal of Evolution," we tried to show that the great purpose of Nature was to train and develop man, — including Mr. Ingersoll and those persons on the Dakota farm. We must interpret the struggle for existence in the light of this great design. Coming up from below, as man has come, it was necessary to set within him a constant spur to activity; so Nature made him hungry and said to him, "Go forth now into this virgin world and keep yourself alive. See whether you can exist or not. Adapt yourself to your surroundings!" Whatever the incidental evils or sufferings of that struggle, it was the means of all man's progress up to a certain point. "The whole creation groaneth and travaileth in pain together until now," to the end that it may issue in "the liberty and glory of the children of God."

1. The struggle for existence has sharpened man's intelligence and put more convolutions

into his brain. The lowest type of savage when we first find him, — how is anything to be made of him?

He had to learn to think and calculate and devise, and if the destructive elements of nature added to the intensity of the struggle, they added to the value of the result. We may say again that, unless the universe had been made upon a totally different plan, we cannot see how these manifestations of the forces in nature could have been avoided. Tornado, earthquake, and lightning are included in the domain of law. There are natural causes which produce them. They belong to the great system and order. They are manifestations of the same forces which produce the beauty and insure the safety of all things. They are all the children of sun and air. There are, indeed, other things in nature than June mornings and summer roses, but they are all produced by the same forces and are in themselves beneficent. They restore the disturbed balance to the atmosphere and earth, and help to make the world fit for habitation. Proctor says: "The inhabitants of the earth are subjected to agencies, beneficial, doubtless, in the long run; perhaps, necessary to the very existence of terrestrial races, but which appear at first sight

energetically destructive. Such are, in the order of their destructiveness, the hurricane, the earthquake, the volcano and the thunder-storm." If we are to have a world at all, therefore, we must have this kind of a one. These elements, it is true, have proved destructive to a degree, while conserving the interests of the whole. But their very destructiveness has put man upon his mettle; has made him strong and wise as he has learned to calculate upon them. He has learned to work with them; and the more man understands and co-operates with nature, the more he finds that these forces are not foes but helpers. Little good as it might do, the word to those children of whom the mother wrote, would have to be something like this: "You are wrestling with friendly forces, not fighting deadly foes. Try to understand them, before you rush to the conclusion that nature is merciless and the power behind nature is cruel. It makes a great difference, if you can put yourself on the side of the prairies and can say to them, 'Come, now, have your own way, do the best you can, and we will push on together and turn this desert and wilderness into a garden of God!'" Said the washerwoman to Emerson, "The more trouble, the more lion."

2. That struggle for existence has been the means of fortifying and strengthening the entire human character.

Even to-day, if we wish to develop the resources of any one, he must bear responsibility, he must be thrust into the thick of events to take his chances and hold his own. Suppose that man had always depended upon external, upon supernatural assistance; suppose that some superior being had brought him food when hungry; had picked him up and carried him to a place of safety when wild beasts were abroad or the fierce elements unloosed. What would have been the result? Men would never have searched for fixed laws and adjusted themselves to those laws. They would have come to believe that an arbitrary and willful being was governing the universe; they would have felt that this being was partial and had his favorites, unless he helped all alike, stopped all tornadoes and rescued equally from the jaws of death all who were in danger. In this case, they never would have cultivated and developed their own powers, for they would not have felt the necessity. To the honor of the Eternal, let us believe that he never, for the sake of any one's personal safety, muzzled the volcano or chained up the thunderbolt. He let them have

free play that men might be trained and disciplined by their action. We know that our own children must learn by experience, and God has chosen the same method for his children. When the baby begins to learn to walk by holding on to a chair and pushing it around in front of him, what a herculean task has he! That chair is too big, and the floor is too uncertain, and his tiny legs are too weak; and why is it that he must be bumped and battered and rolled over so often in a helpless, kicking and screaming bundle? If papa and mamma have any love for him at all, why can't they make him walk all at once, without all this trouble and these bruises? Truly, to him at times the nursery seems a very cruel universe and the powers that preside over it utterly heartless. If he could get up and lecture on the subject, — as some of the grown up babies do, — he could easily prove that there is no such thing as father or mother in the household! The same problem comes in the school. That is not the highest and best love and wisdom which makes the course of education easiest — as every scholar would prefer it — but that which makes our education most effective. And what is this world but a vast nursery or schoolhouse, in which we are learning to walk,

in which we are learning to read the text-books of the universe and the soul? And the Great Power that put us into the school is with us. Back of every advance, behind the exercise of intellect and invention, behind the struggle that brings out, from time to time, the best and strongest qualities, and sends them by the law of heredity down to those who come after, — back of it all, is an impulse and a life divine. The results in human intelligence and character were the aims of the Eternal, and must be his justification!

### III.

#### “THE STRUGGLE FOR THE LIFE OF OTHERS.”

We asked you a moment ago to face the facts comprehended in the theory of Evolution. We now ask you to consider the rest of the facts. There was another struggle that went on side by side with the struggle for existence, the struggle for the individual life; and that was “the struggle for the life of others.”

Creation has been something more than a vast battlefield. It has been from the remotest ages, a scene of unselfishness and helpfulness. To use a few more words from Professor Drummond: “Love is not a late arrival, an after-thought with creation. It is not a novelty of

a romantic civilization. It is not a pious word of religion. Its roots began to grow with the first cell of life which budded on this earth. How great it is the history of humanity bears witness; but, old as it is, and how solid, how bound up with the very constitution of the world, how from the first time an eternal part of it, we are only now beginning to perceive." The emotion of love is a fact of nature, as much as the appetite of hunger. It has its place in the processes of evolution. The animal or man whose conduct is influenced by affection "is obeying a law of nature," as well as the animal or man influenced by hunger or the instinct of self-preservation. Love is everywhere apparent and we must take it into the account. We might say, as did the editor, to those children on that Dakota farm, those children whose mother unaided brought them to honorable manhood and womanhood, "You charge nature with the cyclone, the blizzard, the drought and the blight. Very well. But this is not the sum and substance of nature. Give her credit also for the child's kiss and the mother's benediction. You may say, 'This God of love that you talk about is very well; but we have not seen much of Him in this direction.' No; then how about that mother who cradled you in your weakness,

and who still longs to shelter and sustain you? Where did she come from? She did not call herself into being; and that tenderness and care of hers, whence was it derived but from the great life and love that is in the universe and behind it? Do not make a theory of nature that shall leave out the element which Raphael has put into his Madonna pictures. Believe that this goodness and kindness represented by your mother's love is a part of the universal being. Think this, feel it, live it, and your life will bloom into aspirations and gratitude, even in the sod-house on the prairies, in mid-winter!" When they brought the great Sistine Madonna picture of Raphael from Piacenza to Dresden, there seemed to be no good place to hang it, except where the throne was placed; whereupon the king, Augustus III., with his own hand pushed the chair aside and exclaimed, "Make room for the great Raphael!" So in our schemes of nature and the universe, we must make room for the great Raphael, room for that mother love which he has so marvelously depicted. The world has been a dwelling place of love, no less than an arena for conflict. "If the ethical man," asks Herbert Spencer, "is not a product of the cosmic process, of what is he a product?"



1. The tendency to combination, which is one of the manifestations of love, goes back farther than the struggle for existence.

"The nebular hypothesis," says Dr. Hutchinson, "is the primitive love story of the universe. The power of combination is the mainspring of progress here as elsewhere." And when we rise into the realm of organized matter, we find something more than a struggle for existence in the simplest forms of plant life. There seems to be, suggests the author just quoted, "some sort of blind instinct of devotion or loyalty to the mass accompanying the action of one group of cells in burying themselves in the ground, away from the light, the warmth, the dew; of another in flattening themselves out into leaves, all lungs and no stomach; of another in shrinking down into the woody fiber of the stem or petrifying themselves into its silicious coating. . . . It is hard to rid ourselves of the idea that there must be . . . some dim sense of solidarity amongst them, even if we are not permitted to credit them with kindly intentions or affectionate sentiments. . . . Nor is the service rendered by them always consistent with the welfare of the individual cell; in many cases it is exactly the reverse and it literally lays down its life for its friends and per-

forms its chief function by dying." And when we rise to the most primitive form of animal life we find the amoeba performing an act of self-sacrifice, dividing itself into two, giving half of its own substance, that another being may be called into existence. And so the instinct runs till it culminates in man. It begins in the star-mist and finds its highest expression at the cradle. From the cradle it radiates to the race. The roots of love are struck deep in the soil of nature. We have no right to accuse nature, or the power behind it, of being cruel or merciless.

2. The tendency to coöperation is another manifestation of this love which lies at the center of the universe.

Over against the struggle for existence, we may set the fact that in the animal kingdom coöperation, mutual helpfulness, is just as pronounced and important a fact as antagonism. Darwin himself says: "The individuals which took the greatest pleasure in society would best escape various dangers; while those who cared least for their comrades and lived solitary would perish in greater numbers." Prince Krapotkin declares: "Life in societies is no exception in the animal world. Love is the rule, the law of nature, and it reaches its fullest development

with the higher vertebrates. Those species which live solitary or in small families only are relatively few and their numbers are limited. Life in societies enables the feeblest mammals to resist, to protect themselves from the most terrible birds and beasts of prey; it permits longevity; it enables the species to rear its progeny with the least waste of energy and to maintain its numbers. Therefore, while fully admitting that force and swiftness are qualities making the individual the fittest under certain circumstances, we maintain that, under any circumstances, sociability is the greatest advantage in the struggle for life. . . . Therefore, combine, practice mutual aid. . . . This is what Nature teaches us. ”

Let us learn to look at Nature as one must look at Strasburg Cathedral. In huge proportions, the sanctuary towers before us, and its spire is the highest that rises in the sun. Gothic adornments without number are spread over every surface; and sculptures, tablets and bas-reliefs throng about the walls, even as the worshippers about the doors. But strangely incomplete does the building appear. Each window and door, each molding and entablature, each cornice and pediment, each bas-relief and statue, seems waiting for something above to finish it

and unite it in perfect symmetry to the magnificent structure. Then the eyes of the beholder creep upward from one incompleteness to another, till they rest upon the all-surmounting cross. Thus must we study Nature. Let us not stop with the crude and unfinished elements. From one seeming imperfection to another, must we go; nor must we stop in our researches and say: "Here is something hard and cruel!" Look farther and higher. And you shall see the imperfections and incompleteness of Nature crowned with the cross of sacrifice which is the symbol of Love'

#### IV.

##### CONCLUSION.

In the light of these considerations, we return, for a final word, to the question with which we began: The Eternal Goodness — can it be shown? Is there, at the center of all things, a heart of compassion that beats in sympathy with all the needs of struggling and aspiring humanity?

Through the processes of Nature, we read the power behind it; and when we find that even the struggle for existence, in its deeper meaning, produces strength and courage and self-reliance; when we find that parallel with the struggle for

life runs the struggle for the life of others, which cultivates the affections and enlarges constantly their scope, — we see that the one purpose of all the laws and methods of Nature is the production and perfection of human character, in strength and in beauty, in courage and in love. From the purpose, we interpret the power. The end is righteousness and goodness; righteous and good must be the power! Even the travail and pain in which the creation is said to groan shall manifest the glory of the children of God. In the light of this manifestation, will Nature and Nature's God be vindicated!



1. The first part of the document is a list of names and addresses of the members of the committee.















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